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Electrical World

NEWS ISSUE **March 23, 1946**

A.I.E.E. NOMINEE — J. Elmer Housley, district power manager, Aluminum Co. of America, Alcoa, Tenn., has been nominated for the presidency of the American Institute of Electrical Engineers

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NOW A *Super* CORONOL CABLE

NEW BUTYL-BASE COMPOUND (GRI-8380)

for high-voltage cable insulation

BEATS RUBBER 9 WAYS

Remember prewar CORONOL—that fine high-voltage, ozone-resistant, rubber-like cable? Now, the best of oil-base natural-rubber insulation—as used in prewar CORONOL cables—has a successor that gives better results on every count important to cable life.

This new G-E insulation has a custom-built molecular structure, the base of which is butyl (synthetic) rubber. It is blended, compounded, and applied to the conductor by methods derived from G-E's full-range research. It is free from the "unsaturated" chemical bonds that make natural rubber subject to oxidation and aging. Thus, it is essentially inert to the action of ozone, sunlight, and oxidizing agents, and exceptionally resistant to acids, alkalies, and heat. (See table)

FIGURES THAT MEAN LONGER CABLE LIFE

PROPERTIES	SUPER CORONOL (Typical values)	CORONOL (Typical values)	IPCEA* REQUIREMENTS
Original Physicals			
Tensile lbs/sq in.	750	550	450
Per cent elongation	600	300	250
7 days 70C Geer Oven			
Tensile lbs/sq in.	700	450	400
Per cent elongation	525	225	200
48 hours 70C Oxygen Bomb			
Tensile lbs/sq in.	675	475	400
Per cent elongation	525	240	200
Cold Bend	—60 C	—15 C	—10 C
Power Factor	.010	.030	.050
Ozone Resistance	very good †	good	3 hours

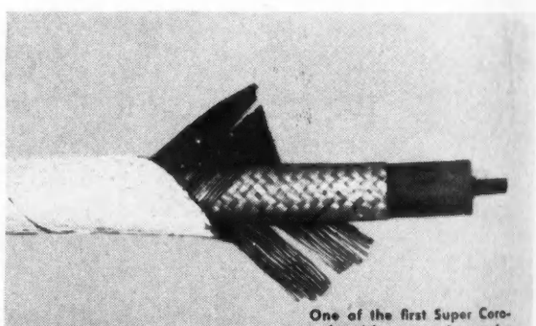
Long-Lived in Field Tests

In the field, as well as in the laboratory, the CORONOL cable made with the new butyl-base insulation has proved itself in a number of installations since early in the war.

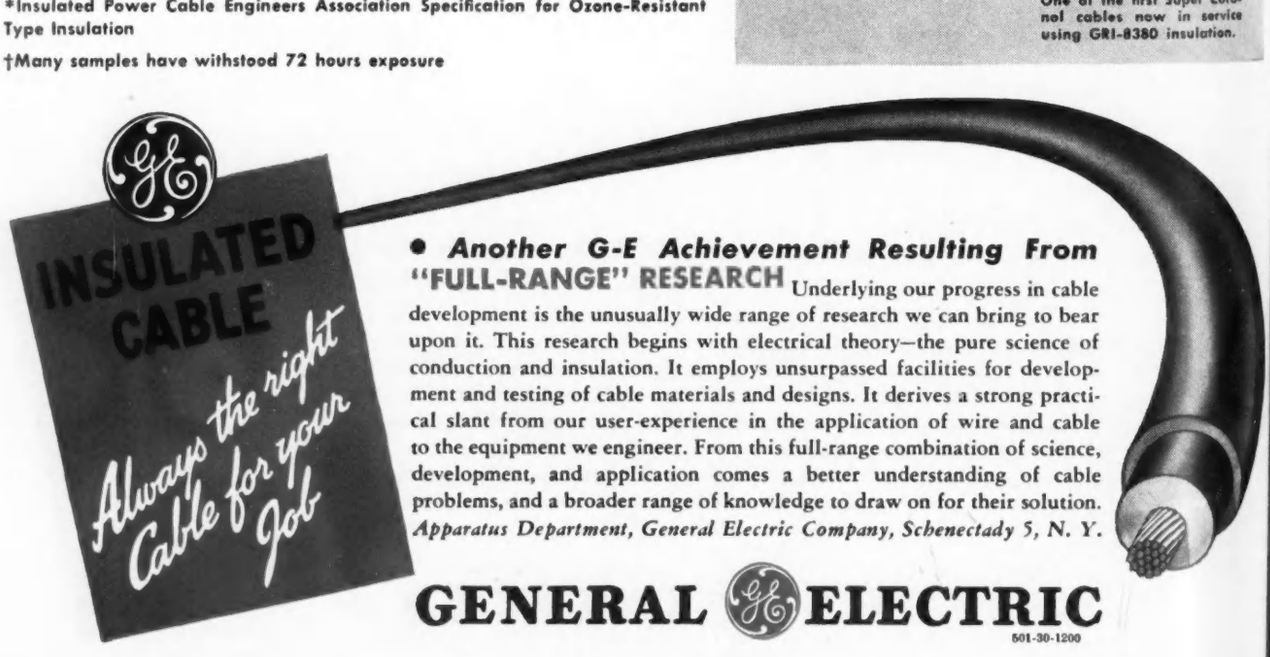
Of equal importance for the future are possibilities for extending the use of the new butyl-base compound to other insulated cables for a wider range of applications, higher voltages, and more extreme limits of temperature.

*Insulated Power Cable Engineers Association Specification for Ozone-Resistant Type Insulation

†Many samples have withstood 72 hours exposure



One of the first Super Coronol cables now in service using GRI-8380 insulation.



• ***Another G-E Achievement Resulting From "FULL-RANGE" RESEARCH*** Underlying our progress in cable development is the unusually wide range of research we can bring to bear upon it. This research begins with electrical theory—the pure science of conduction and insulation. It employs unsurpassed facilities for development and testing of cable materials and designs. It derives a strong practical slant from our user-experience in the application of wire and cable to the equipment we engineer. From this full-range combination of science, development, and application comes a better understanding of cable problems, and a broader range of knowledge to draw on for their solution. *Apparatus Department, General Electric Company, Schenectady 5, N. Y.*

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Electrical World

NEWS ISSUE

Volume 125, Number 12 March 23, 1946

Congress' Public Power Bloc Asks Lobbying Probe

Resolution Introduced This Week Aims Specifically at Lobbies on Price Control, Housing and Power—Move Involves Thrust Against National Association of Electric Companies Which Has Been Active in Washington

Congress' public power bloc has aligned itself with administration forces seeking enactment of a broad legislative program for housing and reenactment of price control legislation in seeking an investigation of lobbying and lobbyists, particularly in these three fields.

Prospects early this week were that there would be little real opposition to a resolution constituting a special five-man House investigating committee provided its sponsor, Rep. Adolph Sabath, Illinois Democrat and chairman of the House Rules Committee, makes any strenuous effort to push his resolution. Republicans and anti-administration Democrats, however, plan to amend the Sabath resolution to provide that the investigation shall include lobbying by government departments.

The Sabath resolution, while broad enough to cover almost any field, is aimed specifically at lobbies on price control, housing and power. Several Congressmen predicted that it would be reported favorably if it were pushed, and conceded that it would pass if reported. They pointed out that it is a hard thing to be against.

The Sabath proposal followed by one day a floor speech in which House Speaker Sam Rayburn asserted that Washington is "seething" with utility lobbyists who, he said, could have a fight with him if they wonted one. Rayburn was co-sponsor with Sen. B. K. Wheeler, of Montana, of the Public Utility Act of 1935.

From the point of view of the electric power industry, the most interesting aspect of the furore in which the House found itself last week is the way the public power crowd seized the opportunity to move out against the National Association of Electric Companies, headed by Purcell L. Smith, formerly president of the Middle West Corp.

While NAEC has not defeated anything for which the public power crowd was really pushing, it has helped obtain the introduction of a number of amendments to public power legislation and has caused increasing concern in the public power camp over possible future effectiveness of its opposition to public ownership.

The turning point came when Rayburn, whose infrequent departures from the Speaker's chair are noteworthy, took the floor to hurl the charge of lobbying and the inference of anti-social activity as a result of the appearance in Washington of a dozen or more executives of southwestern companies. The delegation came here to oppose a $23,000,000 item in the impending Interior Appropriation bill which would start construction of the five-state $200,000,000 transmission system by the Southwestern Power Administration. It was regarded as significant that Rayburn felt it advisable to take the floor on behalf of this item in advance even of a report by the subcommittee considering the Interior bill to the full Appropriations Committee, let alone before the reporting of the bill to the House. Rayburn's speech made it clear that he would fight for the requested appropriation, which includes funds for two fuel-electric plants to back up SPA's hydro energy.

Both Rayburn and Sabath are said to have denied that there was any connection between the former's speech on March 11 and the introduction of the latter's resolution March 12.

Investigation Committee Suggested

The Sabath resolution, which provides in part that the proposed five-man special committee shall investigate ". . . all groups which have or are engaged in the power lobby. . . ," has been seized upon as a vehicle by a group of public power members, mostly northwesterners, who had been seeking an investigation of private power. The Washington State Grange, several members of the Northwestern delegation declared, has long been urging such an investigation. In addition, the value of such a probe is apparent in an election year when Congress as a whole has little positive accomplishment to take back to the hustings. Some members of the group which attempted to organize a power investigation apparently were irked at the address delivered in the House on February 27 by Charles R. Savage, democratic representative from Washington. Savage asserted that "this is the largest lobby of its kind in all power history," and added that "the time is here for an investigation." His colleagues apparently felt that he had jumped the gun for one source close to the delegation described the speech as "not very well timed." The group now is awaiting the outcome of Representative Sabath's proposal before carrying its

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own plans any further.

Speculation as to outcome of the Sabath proposal seemed to be in agreement that if it is amended to include investigation of lobbying by government departments and if any real minority representation were included on the committee, the investigation might very well turn into a tea party since the administration probably would be unwilling to have any real probe start on or even reach its premises. It is at least as easy to find Senators and Congressmen complaining against the OPA lobby on Capitol Hill as it is to find them complaining about activities of specific non-federal lobbyists. Certainly, the record of the past decade is unmistakable as far as power lobbying is concerned, for there just is no comparison between the results of the public power lobby and that of the private power lobby.

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Utilities Escape Serious Damage in Coast Quake

Electrical installations in Sand Canyon, Owens Valley, Calif., escaped damage March 15, when a severe earthquake cracked the Los Angeles water supply aqueduct from Owens Valley, and 60- to 70-ton boulders rolled down the mountainside and smashed in a 60-sq.-ft. section of the reinforced concrete aqueduct. Power generated by the 7,000-kw. plant at Haiwee reservoir was shut off when it became necessary to stop the water flow from the reservoir, but there was no interruption in electrical service. Communities connected to the Haiwee plant also receive power from other sources.

One tower of the Southern California Edison Co. line in the area was saved from damage when a huge boulder, loosened by the quake, failed to continue its roll down the mountain side. Dynamite will be used to break it and hurl the pieces into the Kern River at that point.

The aqueduct break occurred 35 miles above Mojave and 6 miles east of the U. S. Navy's Inyokern ordnance base. Water flowed from the break at the rate of 100,000 gal. a min. at the peak and flooded a 2-mile section of State Highway 395 miles away, but without damage to the pavement or power line installations in the area.

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Named to Power Authority

Dr. Neal D. Houghton of the Department of History and Science of the University of Arizona has been appointed to the Arizona Power Authority for a term expiring March 1, 1949.

E.E.I. Changes Policy as Kellogg Resigns

Successor Will Receive No Pay—Committee Considering Nominees—Turbine Deposit Study Planned

A non-paid president elected by the members will succeed Charles W. Kellogg as head of the Edison Electric Institute. This was made known following a meeting of the board of directors on March 14, when the results of a mail ballot showed that a majority of the members favored the change.

Mr. Kellogg, who himself served in non-paid capacity before taking his present position in June, 1939, will retire to his Eastern Shore farm in Maryland after June 30. A nominating committee, headed by Samuel B. Ferguson, president of the Hartford Electric Light Co., is already at work considering suitable nominees.

The board of directors also gave its approval to a research project to ascertain the underlying laws covering steam contamination, its cause and correction, so that with this knowledge, power plant operators may solve the problem of turbine deposits, from which the industry now suffers a large economic loss.

Instructions have been given to the Prime Movers Committee of the Institute to proceed with the organization of the project and to make the arrangements for participation in the project by such groups as the Association of Edison Illuminating Companies, turbine and boiler manufacturers, and any industrial groups which may be interested.

Where the research work is to be done has not been decided, but it is believed that the project will be assigned to some research institute or university which has the necessary facilities. The cost is expected to run $20,000 a year or more with as many as five years devoted to the problems involved.

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Los Angeles Raises Pay

Raises have been granted to 6,800 employees and executives of the Los Angeles Bureau of Water and Power, effective February 1, which will amount to an annual $1,500,000.

Workers receiving $300 monthly or less were awarded increases of a flat 10 percent. Those earning between $300 and $900 were raised 10 percent on the first $300 and 5 percent on the balance of their salaries. Executives with salaries of more than $900 monthly were granted a maximum increase as applied to $900, or $60 a month.

NEWS BRIEFS

FIRST UTILITY to send its electrical impulses to the moon is the Jersey Central Power & Light Co., which used a 48-in. ad in 54 New Jersey papers to say that it had furnished the power used by the Army in its experiment at the Evans Signal Laboratory, Belmar, N. J., when radar was used to contact the moon.

ALICE AND GENE are now furnishing the power at the Mountain Creek plant of the Dallas Power & Light Co. Alice is the Allis-Chalmers unit, the original one installed; Gene, a General Electric unit, has just been named following its installation.

CONOWINGO HYDRO station of the Philadelphia Electric Co. reports that a new production record of 1,733,763,949 kw.-hr. was set in 1945. This was 52 percent higher than in 1944 and 40 percent above normal. The increase was attributed to extremely favorable water conditions on the Susquehanna.

DEATH TO RATS is the battlecry of the Underground Electric Distribution Department of the Cincinnati Gas & Electric Co., which is placing poison periodically in manholes containing junction boxes. City health officers are cooperating.

A SAFETY VIOLATOR to be proud of is Eggbert, an "employee" of the Central Power & Light Co., Corpus Christi, Tex. Eggbert, who is long on good intentions but short on good judgment, is continually violating safety rules in cartoons which are used in the house organ and on bulletin boards. The company has recently reprinted many of these cartoons in a booklet.

THE LADIES LIKE THEM BEAUTIFUL, that's what officials of Seattle City Light learned when they proposed to erect a substation in a residential section. It took all of the persuasive power of the light officials and the municipal board of public works to convince feminine objectors to the substation that it would be properly landscaped.

A NEW ADVANTAGE of the electric range is reported by a manager of the Georgia Power Co. A customer who inquired about having five apartment-type ranges installed in Negro tenant houses on his plantation said that his tenants were spending too much time cutting wood and that the ranges would be a valuable time saver.

Electrical Industry Seen Setting Higher Standards

Speakers at Convention of North Central Electrical Industries Cover Industry Developments—Economic Limitations on Transmission of Power from MVA Projects Predicted—Adequate Wiring Stressed

Promise that the electrical industry will establish new high standards of performance as it moves ahead to meet today's pent-up public demand for goods and services was seen by speakers at the annual convention of the North Central Electrical Industries in Minneapolis, last week.

The three-day all-industry session drew in excess of 600 utility, contractor, dealer, wholesaler, and manufacturer representatives from Minnesota and the Dakotas to hear discussions ranging from MVA to home freezers and from cold cathode lighting to dairy milk coolers.

Federal development of the Missouri River was the dominating topic of the first-day central station conference. George Loughland, Northern States Power Co, in describing engineering phases of the coordinated Reclamation-Army plan, warned that "demands for water for flood control, irrigation, and navigation may accentuate the long climatic swings in flow on the main stem, detracting from the reliability of power developed. Record maximum and minimum flow rates recorded at Bismark are 284,000 and 5,000 second-feet respectively, Loughland stated. High water flow rates often reach 100,000 second-feet, he pointed out.

Missouri Power Sales Prediction

Revenue foreseen by the government from the Missouri River development was cited by Lee Nelson, manager of the Rochester (Minn.) Utilities, as $175,000,000 annually; $20,000,000 from the sale of power. With an estimated sale of 4½ billion kw.-hr. annually, this means a rate of 4.83 mills per kw.-hr. Nelson pointed out. He questioned, however, whether at the present stage of industry development it is economical to transmit large blocks of power the vast distances that will be required to bring it to market. He showed, for example, that to transmit 300,000 kw. from Garrison Dam to the Twin Cities would require five 287,000-volt transmission circuits each of 54,000-kw. capacity. These lines, which would be 500 miles long, would cost a total of $68,000,000 to build and 3.84 mills per kw.-hr. to operate, he asserted.

Roy Godley, E.E.I., urged utilities to foster development of university courses in farm electrification and reeducation programs to familiarize county agents and others doing educational agriculture work with fundamentals of power applications on the farm.

P. E. McCaughey, manager, National Adequate Wiring Bureau, expressed concern over the prevailing wiring situation that forces thousands of people who have come to need and want a specific appliance to reject it because "there's no place to connect it." Looking at those who suffer most from this situation, McCaughey commented that "it would not be difficult to calculate that the missing outlet might lose 20 times its cost in trade dollars plus the goodwill possibilities of all the people in the electrical industry who would have been involved."

Calling on the electrical contractor to build to higher and higher standards, W. T. Stuart, editor, *Electrical Contracting*, emphasized the interdependence of branches of the electrical industry. "This interdependence," he asserted, "carries with it an obligation for all members of the industry so to conduct themselves that the public will get the best appliances for the use and control of electricity that we know how to provide." By building to ever higher standards of quality and using imagination in applying equipment, the contractor today is in a position to set the pace for other branches of industry, Stuart declared.

Home freezer capacities of 3 to 6 cu. ft. in the future may prove ample for the needs of both urban and farm families, A. W. Tressler, General Electric Co., asserted, providing farm families supplement their home freezer storage

ON CONVENTION PROGRAM—Top Panel: George Loughland, Northern States Power Co., left, and Lee M. Nelson, Rochester (Minn.) Utilities, who analyzed engineering and economic aspects of the federal plan for developing the Missouri River at the North Central Electrical Industries Convention in Minneapolis. Bottom Panel: Active in discussion of farm electrification were, left to right, R. F. Pulver, Minnesota Power & Light Co.; Roy Godley, E.E.I.; C. P. Wagner, Northern States Power

with locker plant service. He foresaw a good market for a two temperature freezer with 8 cu. ft. of refrigeration and 8 to 10 cu. ft. of freezer space in one unit.

Frank Brownson, Westinghouse Electric Corp., cited a survey of 2,000 families to show the growing popularity of first-floor laundries. Of the 70 percent doing their washing in the basement, a fifth wished for first-floor facilities. The remaining 30 percent have them in some form. Experience with automatic washers indicates a 50-percent increase in the number of loads of clothes washed per week compared with ordinary washing machines. There is usually a drop of 50 percent in the clothing sent to commercial laundries and a 17-percent drop in clothing sent to dry cleaners, where automatic washers are used, Brownson stated.

Willard C. Brown, G.E., saw developments in fluorescent light sources moving toward better colors, improved cathode construction, and quicker starting. Don Caverly, Sylvania Electric Products, urged utilities to put architects on their payrolls to capitalize on the trend toward built-in lighting in stores and commercial establishments. The trend is away from fixtures, he believed.

A. W. Larson, Westinghouse, while recognizing the tendency toward architectural lighting, warned that it can't and won't take place overnight because of its higher cost. Existing equipment will continue to be used by those who don't have funds for architectural lighting. Larson proposed non-symmetrical arrangement of fluorescent luminaires in small offices, "above and around but never in front of the worker" as the most desirable fixture layout.

The all-industry meeting on rural electric equipment and use, conducted by C. P. Wagner, Northern States Power, was marked by a series of brief panel discussions on farm electrification problems. Several speakers pointed to the special needs of farmers for electrical equipment which may not follow city-use designs.

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Allatoona Dam Started

Work has started on the $17,400,000 Allatoona dam and reservoir. When completed, the project will regulate floods on the Etowah River and provide 66,000 kw. of electric capacity.

The dam will be built across the Etowah, just below the point where Allatoona Creek enters, in Bartow County, five miles east of Cartersville, Ga. The 184-ft. high concrete dam will be 400 ft. at its base and 1,020 ft. at the top.

Julius Krug Sworn as Interior Secretary

Promises to Carry Out Mandates of Congress—Oscar Chapman Gets Nomination as Undersecretary

Julius A. Krug was sworn in as Secretary of Interior Monday in a ceremony which drew a large and diverse group of guests.

After being sworn in by Associate Justice Wiley Rutledge of the Supreme Court, Krug announced the appointment

Secretary Krug and Justice Rutledge

of Oscar Chapman, veteran assistant secretary for 13 years, as undersecretary. Chapman's confirmation by the Senate is regarded as certain.

Two western senators, each of whom had been mentioned for the Interior secretaryship, praised the new appointee. They were Carl Hatch, New Mexico democrat, who expressed the belief that Krug would administer Congressional mandates with "fidelity, wisdom and integrity," and Joseph O'Mahoney, Wyoming Democrat, who described Krug as a "great public administrator."

Krug presented to his audience his wife, his father, and his two children, a daughter and a seven-year-old son whom he described as "the only curmudgeon in the Krug family."

In a short speech, Krug asserted that the resources of the nation were demonstrated during the recent war not to be inexhaustible. Development of these resources in conjunction with the people of all regions, their governmental and private institutions, he said, would be Interior's job.

Krug promised that the department would be administered under the laws laid down by Congress, and added that,

"I admit that sometimes my own personal views will differ, and I shall not hesitate to state and urge them. But where they are not supported in the Congress, they will not affect the activities of the department.

"I shall seek to carry out our many diversified functions by encouraging the participation of individuals and private corporations in the development of the country," Krug declared. "Government action will be resorted to only when public purposes can not otherwise be accomplished, but in such cases, the department will carry out the mandate of the Congress without fear or compromise with private interests seeking to obstruct necessary action."

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Housley Nominated as A.I.E.E. President

(See Front Cover)

J. Elmer Housley, district power manager, Aluminum Co. of America, Alcoa, Tenn., has been nominated for the presidency of the American Institute of Electrical Engineers.

Mr. Housley, who joined the A.I.E.E. in 1919, became a Fellow in 1943. He has been vice-president for the Southern District. In the past he has served on many committees, and he is now chairman of the committee on electrochemistry and electrometallurgy.

Born on January 9, 1893, in Knoxville, Tenn., Mr. Housley was graduated from the University of Tennessee in 1915 with the degree of bachelor of science in electrical engineering.

Since then he has been associated with the Aluminum Co. of America and its subsidiaries. His first work was with the Aluminum Ore Co., East St. Louis, Ill., where he advanced rapidly. During this period, he was instrumental in persuading the electric motor industry to change motor designs to withstand severe duty in chemical plants.

Early in 1924, he became assistant district electrical superintendent of the parent company at Alcoa, Tenn. He held positions as district electrical superintendent and superintendent of power before becoming district power manager, his present position. Since 1927 he has been in charge of engineering, operation and maintenance of the hydroelectric power system of the company in eastern Tennessee and western North Carolina. This system is interconnected with other power systems in the central area.

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Evans to Go to Austria

Llewellyn Evans, chief consulting electrical engineer for the Tennessee Valley Authority, has been loaned to the War Department and will be sent to Austria to assist the government there on problems of power generation and distribution. He will leave as soon as possible.

Joint Telephone, Electric Service Theme of Meeting

Symposium at Engineering and Operation Section of Southeastern Electric Exchange Devoted to Coordinated Measures Now on Trial—Atomic Power for Utilities Deprecated—Labor Relations Analyzed

Joint participation of power and telephone utilities in serving remaining rural areas was a major theme at the meeting of the engineering and operation section of the Southeastern Electric Exchange in Birmingham, March 14 and 15. The trials of both carrier and higher voltage joint use were reported favorably. Major interest otherwise was manifested in analysis of labor problems, rehabilitation after crippling storms, electronics, corrosion, and distribution economics.

Parallel objective in serving rural areas on the part of both power and telephone utilities was the occasion for an all-afternoon symposium on coordinated measures already under trial. Lee Cook, Ebasco Services, was chairman. Frank A. Cowan, American Telephone & Telegraph Co.; W. H. Jentzen, Southern Bell Telephone & Telegraph Co.; H. J. Scholz and T. H. Mawson, Commonwealth & Southern Corp., detailed the Selma, Ala., trial installation (ELECTRICAL WORLD, November 24, 1945, Page 76) and the scope of both rural joint occupancy and carrier on the power circuits. The inter-industry aspects are being studied by a committee functioning under the established coordination setup.

Carrier System Practicable

Cowan said Western Electric Co. is starting production on the carrier equipment, the Selma and Jonesboro, Ark., installations having confirmed the full technical practicability for certain limited circumstances. The joint use with 5 to 15 kv. is based on a new carbon cylinder protector and on use of high-strength steel wire to permit telephone spans equal to the 450–570 ft. power spans. Blair Jenkins (Raleigh) said he, a communication engineer, had never talked on a carrier circuit of better quality or over a parallel with less noise than at Selma.

Fantastic claims for quick and cheap atomic power were deprecated by President E. L. Godshalk, but he urged that utilities not ignore it nor frown upon the flair and appeal of other glamorous developments. Vice-President E. W. Robinson, Alabama Power Co., rated competition, particularly the unfair kind, as the number one problem and said the answer to the narrowing spread between average sales price and cost was to sell more service of better quality at best efficiency, taking every advantage of small measures in design and operation. Factory assemblies and mechanized facilities will more than ever meet rising labor costs by taking advantage of cheap capital. Robinson added that better personnel programs would save a nickel for every penny saved by physical economies. In discussion C. B. McManus, Georgia Power Co., said that supervisory and directive personnel need training in employee psychology as well as recruits need job training.

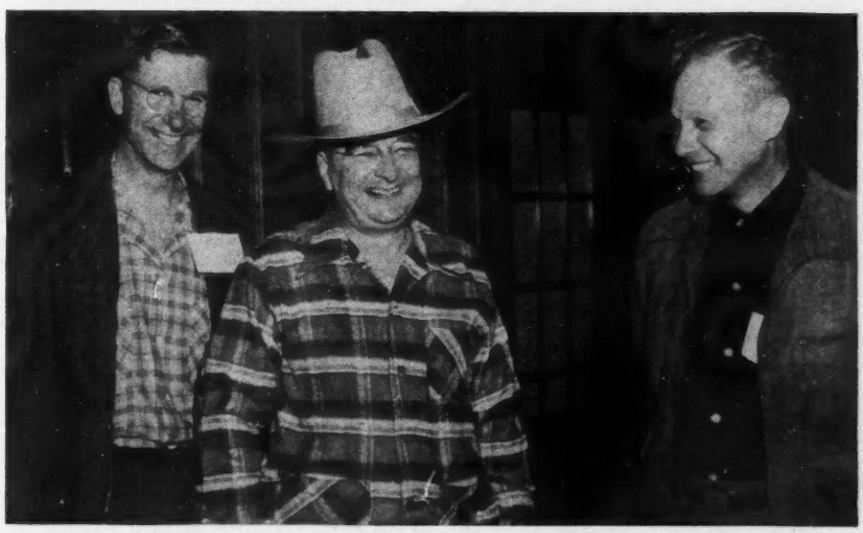
Candid analysis of the one-sided trends in labor relations by Lee H. Hill, publisher of ELECTRICAL WORLD, included his assertion that poor employee relations account for much of the labor relations problems and that too few managements are aware of the distinction. Legislation to reinstitute basic collective bargaining and to define unfairness on the part of labor as well as management is long overdue, he said. He found little merit in industry-wide bargaining and none at all in compulsory arbitration. Mediation and real fact-finding without recommendation were advocated.

Southern Research Institute, now functioning in Birmingham for sponsoring industries in the Southeast, was enthusiastically described by President T. W. Martin, Alabama Power Co., as an outstanding example of economic betterment of the whole industrial community. He said the researches now in progress are correcting the remaining backwardness of the territory. Utilities collectively have contributed a third of the million-dollar capital. The results of the studies are inescapably and intimately associated with the destiny of the utilities.

Fresh from the still continuing activity in repairing the hurricane damage of last October on the Florida Power & Light Co. system, P. J. Carlin outlined the preparatory measures adopted and readied when storms approach. Staffs and stocks are organized, specific assignments, maps and instructions issued. Restoration is to priorities first and then synchronized for the rest. A storm procedure manual is being revised to record the lessons from last fall's misadventure.

Fifteen widely diversified uses of electronics on power systems were listed and discussed by S. C. Bartlett, American Gas & Electric Service Corp., reaching from carrier and mobile units to sabotage alarms and null balances for potentiometers. In particular he described details of simple measures to squelch and to control carrier volume and noise. He predicts that tubes will progressively replace small relays.

For severe exposures to salt atmos-



DEEP IN THE HEART OF TEXAS—When Albert F. Wakefield, president of the F. W. Wakefield Brass Co., Vermilion, Ohio, and of the Illuminating Engineering Society, visited Dallas for a meeting of the Southwestern Section of I.E.S. in his honor, H. R. Heitzman, right, regional vice-president, and P. M. Rutherford, Jr., Dallas Power & Light Co., outfitted him in a 10-gallon hat and bright plaid shirt to put him in style for the big square dance which followed the meeting

phere, M. E. Noyes, Aluminum Co. of America, enumerated ten protective measures that could be applied to ACSR lines, among them: armored rods, good clamps, more bolt pressure, use of No-Ox-Id at taps, compression joints, zinc chromate at joints, use of larger conductor, and avoidance of dissimilar metals.

In reviewing war-time developments, Charles A. Scarlott, Westinghouse Electric Corp., said "tea-cup" power plants based on uranium are pure fantasy; in connection with the gas turbine, he mentioned the free-piston compression engine as promising a 40 percent thermal efficiency for a gas turbine thus relieved of the compressor load. Among materials he stressed Fosterite, Refractaloy (K-42-B) and an asbestos Fosterite substitute for mica.

Underlying factors in setting up a distribution system expansion plan were discussed by Chase Hutchinson, Ebasco. He stressed accurate data and sound, long-range approximations; he also warned against forgetting the circuit losses and taxes in making economic balances.

A recent design of oilless indoor circuit breaker for substation and station auxiliary service (5 kv., 150,000 kva.) was described by T. G. A. Sillers, Allis-Chalmers Manufacturing Co. It places the arc coolers horizontally between the studs and bushings and is designed to be simple to take apart or maintain.

Elimination of certain sizes of distribution transformers with gains alike to users and makers was advocated by O. B. Falls, General Electric Co.

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Canadian Output Statistics

The Dominion Bureau of Statistics has released the following output statistics of Canadian central electric stations in thousands of kilowatt-hours.

Period	1946	1945
January	3,428,773	3,422,683
Primary	2,824,698	2,913,981
Secondary	604,075	508,702
Exports to U.S.	198,522	164,470
	1945	1944
December	3,288,710	3,356,102
Primary	2,744,538	2,874,666
Secondary	544,172	481,436
Exports to U.S.	217,737	200,684

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Floating Plant Will Be Kept

City commissioners of Jacksonville, Fla., have approved renewal of the lease on the floating power plant owned by the Navy, which has been at Jacksonville for over a year to bolster the municipal system. The city pays $1,000 a day for use of the plant. Recently the government denied a request by the city that rental should apply to the purchase price if the city should buy the plant.

FOREIGN POWER NOTES

Turkey . . . Turkey's plans for post-war expansion of industry have resulted in orders for the construction of a power station at Catalagzi and a coal preparation plant in the Zonguldak coal fields.

The Metropolitan-Vickers Electrical Co. of England, in association with three other British firms, has signed a contract for the construction of a power station at Catalagzi in the northwest part of Turkey on the Black Sea. McNally Pittsburg Manufacturing Corporation, Pittsburg, Kan., is sending an engineer to the Zonguldak coal field in Asia Minor, on the south shore of the Black Sea, for the purpose of making preliminary surveys for a new coal preparation plant. The plant contemplated will improve the quality of the coal by eliminating the high ash, or non-burnable content.

At present, power production is largely based upon coal. In 1943, for instance, 331,000 tons of coal, 80,000 tons of lignite, and 7,400 tons of oil were consumed in generating stations, while only 6.4 percent of household and 4.5 percent of industrial current derived from water power.

Lignite production, raised from 8,000 tons in 1931 to 150,000 tons in 1940, is to be further expanded in the Smyrna area. Coal output doubled in the same period to 3,000,000 tons in 1940.

Regions in more densely populated western Turkey, and around Kaiseri and Adana in the East and South will receive first attention in the expansion program which will result in the construction of 27 hydroelectric projects. The schedule calls for completion of about 40 percent of the planned facilities—amounting to 330,000 kw. in all—in these key areas by 1950.

WESTINGHOUSE Electric International Co. has reached an agreement with the Turkish Central Directorate of Air Communications for the granting of a $4,500,000 credit whereunder the American concern will supply material and installations for a chain of airports in Ankara, Istanbul, Smyrna, and Adana. The work will take five years. American engineers are expected in Turkey shortly to assist with the work.

Russia . . . Fifteen thousand small hydro-electric stations and 9,000 steam power plants, with an aggregate capacity of 2,000,000 kw., represent the goal of the Soviet's new five-year plan for rural electrification. The plan is a continuation of the policy of favoring small local units over the building of long transmission lines from large power sources serving industrial areas.

Regional representatives of the Rural Electrification Administration help collective farmers draw up plans for the village stations and supervise their construction. The government extends credit to the farmers for purchase of necessary equipment. Special miniature hydro-turbines of simple design have been developed to facilitate installation. Sites of the hydro plants are small rivers and lakes. Many of the steam power stations operate on peat.

PRODUCTION of radios, mostly 5 and 6-tube sets, has begun in two Russian factories and considerable expansion is planned. For rural areas lacking electricity, the Moscow radio works will produce all-wave 6-tube sets with dry batteries. Another plant plans to make 5-tube all-wave sets with powerful loudspeakers. Later in the year, perfected 12-tube Leningrad sets will go into production.

Palestine . . . Emanuel Neumann, chairman of the Commission on Palestine Surveys, and James B. Hays, chief engineer of the commission, have gone to Jerusalem, where they will present to the Anglo-American Committee of Inquiry plans for setting up a Jordan River power and irrigation project, modeled after the Tennessee Valley Authority, at an estimated cost of $250,000,000.

South Africa . . . Electrification plans of the South African Railways involve the conversion to electric traction of 266 miles of track; and when the works in hand or authorized are completed, the electrified mileage in the Union of South Africa will be 847 miles.

Norway . . . All Norwegian main railway lines will be electrified within 15 years, according to an announcement by the Director General of Norway's state operated railroads. The Sorland line and Kongsvinger line will be completed first, and the Bergen line last. Parliamentary approval already has been given to the electrification program.

France . . . Plans are under way for electrification of the remainder of the Paris-Lyons route of the French Government Railways which are now 25 percent converted from steam. For use on this route and on other extensions, 240 electric locomotives will be needed. The annual energy required is estimated at 440,000,000 kw.-hr.

18½ Cent Raise Refused by Westinghouse Strikers

Offer Rejected When Union Is Asked to Pay Stewards for Work Done on Company Time—Clarification of Seniority Clause and Higher Increase for Women Than for Men Employees Also Bring Objections

Westinghouse offer of 30 million dollars yearly addition to employees' take-home pay was rejected by the C.I.O. United Electrical, Radio & Machine Workers Union Wednesday. This figure, Gwilym A. Price, president of Westinghouse Electric Corp. pointed out, is 4 million dollars more than the company's net income in 1945.

The proposal offered an 18½ cents per hour increase, a provision that the union pay its stewards for that portion of time consumed in transacting union affairs, a security clause that states seniority denotes years of service to the company and not years of "good standing" in the union, and an additional increase for the women employees to partially eliminate rate differentials between sexes.

Price Makes Statement

"As we have shown many times," Mr. Price stated, "Westinghouse has paid higher wages than its competitors and industry in general. A study of wages in October, 1945, showed Westinghouse pays 11 percent higher than the electrical industry and 16 percent higher than 25 major industries. In spite of this, we have proposed an 18½-cent an hour wage increase of which 1 cent will go toward elimination of differentials between men's and women's wage rates. Almost 25 percent of our employees are women. The wage raise will apply to all manufacturing divisions except the lamp division which will be covered by a separate proposal. The increase will mean 17½ cents an hour added to the guaranteed hourly take-home of all wage earners—and a revision of women's rates that will result in an average company-wide increase of 4 to 5 cents an hour for women employees—on top of the general wage increase. The wage offer we have made is 2½ cents more than the average to be paid by the three major auto companies, according to newspaper reports of wage settlements made by these companies."

Price increases, Mr. Price stated, were not the complete solution to the problem. "The public," he added, "will not buy Westinghouse products if they cost substantially more than the products of competitors. Even though we pay much higher wages, we cannot sell our products at prices that are out of line with those of competitors. Therefore, to enable us to operate successfully; to pay these higher wages; and to maintain employment, Westinghouse must have efficient and uninterrupted production. To help accomplish this, certain changes will be necessary in the union contract."

These, it was pointed out, include restoration of the incentive system to a pre-war basis, stabilizing the workers' bonus at a fixed amount that will not vary with the ups and downs of production, payment of union stewards and leaders by its organization for time utilized in transacting union business during working hours and a provision that workers be secure in their position as long as service to the company is satisfactory.

Mr. Price told a representative of ELECTRICAL WORLD that the field engineering and sales organizations are operating and that proposals forwarded to East Pittsburgh are being received. Engineers and technical sales forces are operating in improvised offices to expedite work as soon as the plants are opened.

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Ontario Hydro Commission Will Build 45,000-Hp. Plant

Ontario Hydro-Electric Power Commission plans to erect a 45,000-hp. development on the Aguasabon River to supply power for a $15,000,000 paper mill and townsite in the area 130 miles east of Port Arthur.

The new plant will cost about $8,500,000 and will be completed in the first half of 1948. It will be located approximately two miles north of the river's outlet into Lake Superior and seven miles east of Schreiber.

Power from the new development will be available to serve Jackfish and Schreiber, and extra power will be used by the Thunder Bay System.

To effect the necessary tie-in with this system, a transmission line will be constructed between the new plant and Hydro's Alexander Landing development on the Nipigon River. The new 70-mile line and switching equipment will cost $1,500,000.

WORK DURING STRIKE—Engineers and commercial representatives of General Electric Co. during the strike worked wherever they could improvise offices. Here are R. W. Corbian, L. C. Harriott, George M. Kirkpatrick, Walter Evans, and A. R. Teasdale working on design problems in the biology laboratory of Union College

Production Underway at General Electric

Heavy Apparatus for Utilities Gets Jump on Light Appliances — 90 Percent Back at Schenectady

Production of heavy electrical apparatus for utilities and industries got the jump over light apparatus and appliances in the General Electric plants this week. However, there are still "serious dislocations" caused by the 62-day strike and weeks may be necessary before returning to normal.

At Schenectady, work on heavy equipment got under way on March 18. Since many of the component parts of generators, switches and transformers were in the machines and some of the equipment was in the process of assembly, a greater percentage of employees could be gainfully employed at this plant than was the case in other cities.

Approximately 90 percent of the Schenectady employees were "on the job" the first day. The remaining 10 percent will be called back as fast as they can be integrated into production schedules.

Production workers checked machines and prepared to "start rolling." Engineers checked drawings, specifications and orders to ascertain that no change in "specs" had been agreed upon during the strike. The end result was that "work in process" started on the path to completion first. New orders will be placed in manufacturing stage as soon as engineering and preliminary steps can be completed.

Status of Orders in Doubt

One of the most serious difficulties caused by the strike and which must be overcome is the "dislocation" in engineering and in records of materials and parts. Although engineers have been checking drawings and expediting movement of materials since March 11, the status of many orders still must be determined. Sufficient time has not yet elapsed to clear up this situation. Records of receiving clerks likewise, are incomplete. Hundreds of freight cars containing materials and parts are on the sidings awaiting checking. These are being processed as rapidly as possible and are being bumped to their proper location.

Production at other plants is likewise proceeding but at a slower rate. Definite figures are not available for these plants and "it may be a matter of weeks before some of the plants are where they were before the strike," Charles E. Wilson, president of the company, stated.

Considerable time will elapse before factory personnel will know definitely the status of shipments of materials. Mr. Wilson said that some of the scarce materials may have been diverted to other users by suppliers, and that considerable tracing must be done.

He also declared that preparations are now being made to apply for price relief. "U. S. Bureau of Labor statistics show that since January, 1941, the average prices of all commodities have risen 32.2 percent, of raw materials 59.4 percent, and of manufactured goods 23.1 percent," Mr. Wilson pointed out. "Looking at these figures, it can readily be seen that price relief was needed even before the wage increase of 18.5 cents. As soon as we can gather the necessary information on the 200,000 produced, we will request price relief," he concluded.

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Small Maine Utility Sold

Purchase of the Lee Mutual Electric Co. by the Bangor Hydro-Electric Co. for $18,000 has been authorized by the Maine Public Utilities Commission. Lee Mutual, which operates in Lee and Winn, both in Penobscot County, has 17 miles of line. It has been buying its power from Bangor Hydro for some time.

Georgia Power Reveals 5-Year Reforestation Plan

Georgia Power Co. has announced a five-year program of soil conservation and reforestation on its reservoir lands in middle and north Georgia. President W. E. Mitchell said the plan would involve an expenditure of more than $360,000 during the five-year period. The company plans to develop 1,500 acres of pasture land, to reclaim 2,000 acres of farm land, plant 5,000 acres in pine seedlings, and to build 1,000 miles of fire breaks in forest areas.

Mr. Mitchell said the company would maintain its own forest fire fighting equipment with two-way radio, and he estimated approximately 100,000 acres of timberland would be improved permanently through the program.

Seedlings, he said, will be planted on cutover acreage where natural reforestation is not effective, and work on this is already underway. Workers have planted 75,000 slash pine seedlings on Lloyd Shoals reservoir land in Butts County, and this month will plant another 75,000 seedlings on the High Falls reservoir property in Monroe County.

MEETINGS

American Institute of Electrical Engineers—Summer convention, Hotel Statler, Detroit, Mich., June 24-28. H. H. Henline, secretary, 33 W. 39th St., New York 18, N. Y.

Previously Listed

American Society of Mechanical Engineers—Spring meeting, Hotel Patten and Reid House, Chattanooga, Tenn., April 1-3; semi-annual meeting, Book Cadillac and Statler hotels, Detroit, Mich., June 17-20. Ernest Hartford, executive assistant secretary, 29 W. 39th St., New York 18, N. Y.

Edison Electric Institute—General sales conference, Edgewater Beach Hotel, Chicago, Ill., April 2-4; annual convention, Waldorf Astoria Hotel, New York, N. Y., June 3-5. Col. H. S. Bennion, managing director, 420 Lexington Ave., New York 17, N. Y.

Midwest Power Conference—Annual meeting, Palmer House, Chicago, Ill., April 3-5. S. E. Winston, director, Illinois Institute of Technology, Chicago 16, Ill.

National Electrical Manufacturers Association—Spring meeting, Palmer House, Chicago, Ill., week of April 8; special sections meetings, The Homestead, Hot Springs, Va., June 17-19. W. J. Donald, managing director, 155 E. 44th St., New York 17, N. Y.

Missouri Valley Electric Association—Engineering conference, Hotel Continental, Kansas City, Mo., April 10-12. I. D. Pettegrew, director, 1004 Baltimore St., Kansas City 6, Mo.

Electrochemical Society—Spring meeting, Tutwiler Hotel, Birmingham Ala., April 10-13. Colin G. Fink, secretary, Columbia University, 3000 Broadway, New York 27, N. Y.

Pennsylvania Electric Association—Industrial committee conference, Hotel Hershey, Hershey, Pa., April 11-12; G. E. Duerr, chairman, West Penn Power Co., Pittsburgh, Pa. Engineering Section all committees, Penn Harris Hotel, Harrisburg, Pa., May 28-29; E. B. Shew, chairman, Philadelphia Electric Co., 900 Sansom St., Philadelphia 5, Pa.

National Electrical Wholesalers Association—Annual convention, Stevens Hotel, Chicago, Ill., April 21-25. C. G. Pyle, managing director, 500 Fifth Ave., New York, N. Y.

Society of the Plastics Industry—National plastics exposition, Grand Central Palace, New York, N. Y., April 22-27. John Wetherby, secretary, 295 Madison Ave., New York 17, N. Y.

American Institute of Electrical Engineers—Northeastern district, Buffalo, N. Y., April 24-25. H. H. Henline, secretary, 33 W. 39th St., New York 18, N. Y.

Southeastern Electric Exchange—Annual conference, Edgewater Gulf Hotel, Edgewater Park, Miss., April 24-26. J. W. Talley, executive secretary, 303 Haas-Howell Bldg., Atlanta 1, Ga.

International Lighting Exposition—Stevens Hotel, Chicago, Ill., April 25-30. A. B. Coffman, manager, 111 W. Jackson Bldg., Chicago 54, Ill.

National Association of Corrosion Engineers—Annual convention, President Hotel, Kansas City, Mo., May 7-9. Elton Sterrett, executive secretary, 318 Southern Standard Bldg., Houston 2, Texas.

Great Lakes Power Club—Spring meeting, Palmer House, Chicago, Ill., May 24. Almer Skretting, secretary-treasurer, Wisconsin Electric Power Co., Milwaukee 1, Wis.

National Fire Protection Association—Annual meeting, Hotel Statler, Boston, Mass., week of June 3. R. S. Moulton, technical secretary, 60 Batterymarch St., Boston 10, Mass.

American Society of Agricultural Engineers—Annual meeting, New Jefferson Hotel, St. Louis Mo., June 24-26. Raymond Olney, secretary, St. Joseph, Mich.

American Society for Testing Materials—Annual meeting, Buffalo, N. Y., June 24-28. R. E. Hess, assistant secretary, 260 S. Broad St., Philadelphia 2, Pa.

Canadian Electrical Association—Annual meeting, Banff Springs Hotel, Banff, Alberta, Canada, June 26-28. B. C. Fairchild, managing director, 704 Tramways Bldg., Montreal 1, Que., Canada.

These L-M Heavy Duty Lightning Arresters Assure *Lasting Protection* for Your Line Equipment

"I insist on the VALVE type"

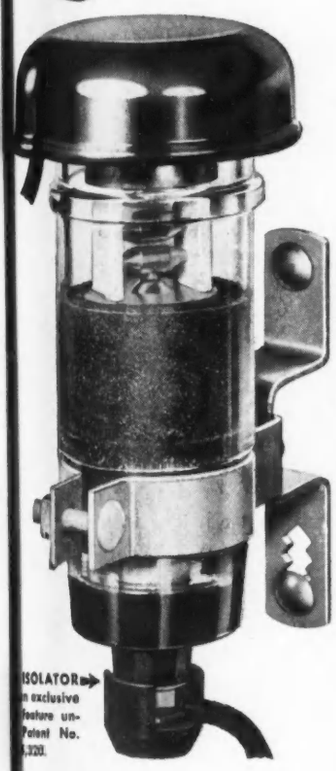
Some utility engineers have used Valve type arresters for years—prefer their all-around excellent performance.

Other engineers are sold on Expulsion arresters—like their simplicity.

Line Material Company makes both of these and other types of lightning protective equipment. L-M Valve type arresters, because of their superior design and thorough sealing, give years of trouble-free service. L-M Expulsion arresters, too, assure a high degree of protection and have a long service life.

L-M engineers have carried on extensive laboratory and field research on many makes of both types. Here is a simple summary of the findings from these tests:

"I prefer the EXPULSION type"



ISOLATOR ⇒ an exclusive feature un- Patent No. 3,220.

L-M Valve Type Heavy Duty Arrester

1. High Discharge Capacity: stable characteristic element handles both high amperage, steep wave fronts, and long tail surges equally well. Assures years of unchanging performance.

2. Goes Into Action Fast: electrically fast ladder gap acts quickly, before surge can build up and cause damage.

3. Double-Sealed Against Moisture: sealed top and bottom by synthetic rubber gaskets held under pressure; double-sealed with weatherproof compound which *seals the seals;* assures years of protection.

Six sizes with ratings from 1 to 15 Kv.

Comparison of Characteristics of L-M Lightning Arresters

	L-M HEAVY DUTY VALVE TYPE	L-M HEAVY DUTY EXPULSION TYPE
Sparkover Voltage	Low, especially on steep front waves.	Moderate
IR Drop	Moderate	Very low—practically none.
Follow Current	Draws negligible follow current.	May draw substantial follow current, but cuts off arc at end of first half cycle.
Back-up Links	No limitation on size.	Must be large enough to handle follow current.
Service Life	Dependable service for unlimited period.	Many years of adequate protection.
Noise	Quiet—no noise.	Noisy; more suitable for rural than urban use.
Gas Discharge	None	About the same as an expulsion fuse.
Spark Gap Protection	Double-sealed to preserve accuracy of spark gap, and to assure complete protection against moisture and radio interference.	None needed.
Interconnection of ground leads	Both types: arrester ground should be interconnected with apparatus, for reliable protection against high ampere surges. Leads should be short.	

Write for Bulletins

Complete details on the design and construction of L-M Lightning Arresters furnished on request. If you will outline your problem and requirements, we'll send you the data you need. Address Line Material Company, Milwaukee 1, Wisconsin.

L-M Expulsion Type Heavy Duty Arrester

1. High Discharge Capacity: wedge design of arcing chamber provides high surge capacity, with ample space for venting the necessary gas pressure.

2. Goes into Action Fast: series of gaps cuts time lag in sparkover on steep wave fronts.

3. Long Service Life: long arcing channel slows fibre erosion; wedge shape switches heavy follow-current arc off of center electrode; prevents burning; maintains low sparkover voltage.

Three sizes: rated at 3000, 6000 and 9000 volts. 12,000 and 15,000 volt sizes available soon.

•

LINE MATERIAL
LIGHTNING ARRESTERS

L-M DISTRIBUTION EQUIPMENT INCLUDES: Distribution Transformers • Fuse Cutouts and Fuse Links • Lightning Arresters • Oil Switches • Pole Line Hardware • Line Construction Specialties • Underground Equipment • Fibre Conduit • Street and Airport Lighting Equipment • Wired Radio Control Equipment • Capacitors

EFFECT OF THE NEW WAGE-PRICE POLICY ON THE ELECTRICAL MANUFACTURING INDUSTRY

ELECTRICAL WORLD has asked a representative group of electrical manufacturers how the new wage-price policy will affect them. Answers vary widely, but in many respects there is significant agreement among the 86 companies whose replies are summarized below:

1. **Increased prices are essential.** Every company but one (and it already had raised prices 13 percent) reported that higher costs make necessary an advance in prices. Estimates range from 5 to 40 percent, with almost two-thirds the manufacturers stating an increase of more than 15 percent will be required and most of the remaining third needing a 10 to 15 percent advance.

2. **About two-thirds of the companies have not changed prices since January, 1941** (the base period specified in the questionnaire). Of the other third, a few report advances up to 18 percent; but most show an increase around 10 percent.

3. **While prices remained unchanged, labor costs of half the companies rose in excess of 50 percent and raw material costs increased 15 percent or more.** As was to be expected, the rise in labor costs has differed greatly from company to company. However, few companies have failed to advance straight-time hourly wage rates more than the increase in the cost of living since January, 1941.

4. **About half the companies report labor is now receiving higher average straight - time hourly earnings than at V-J Day.** But in most instances, the increase falls far short of 18 percent.

5. **If wage rates were to be boosted 18 percent above V-J Day, about half the electrical manufacturers would be required to grant an additional 15 to 20 cents an hour.** But for many small companies whose pre-war wage rate was lower than average, 15 to 20 cents would represent a boost considerably in excess of 18 percent.

6. **All producers agree raw material prices will rise—10 to 15 percent is a typical estimate.** This will be piled on top of increases of equal magnitude that have occurred since January, 1941.

Table II

Increase in Average Straight-time Hourly Earnings of Labor Since V-J Day (Reported by 40 Electrical Manufacturing Companies)

Increase Over V-J Day Level	Number of Companies Reporting this Increase
$.02–$.03	7
.03– .05	12
.05– .08	5
.08– .12	9
.12– .16	6
.16– .18	1

Table I

Rise of Average Straight-time Hourly Earnings of Labor Since January, 1941, Where No Increase Has Occurred Since V-J Day (46 Electrical Manufacturing Companies)

Total Increases In Average Straight-time Hourly Earnings Since January 1941 if Wage Rates are Raised 18% Above V-J Day	Number of Companies Reporting This Increase	Amount of Increase from January 1941 to V-J Day in a Typical Company*	Further Increases Necessary to Raise Hourly Earnings 18% Above V-J Day in a Typical Company*
$.70–$.75	1	$.428	$.272
.65– .70	1	.440	.220
.60– .65	3	.425	.190
.55– .60	5	.430	.150
.50– .55	9	.354	.157
.45– .50	5	.276	.185
.40– .45	13	.264	.160
.35– .40	6	.212	.164
.30– .35	3	.160	.150

*The typical company is the median for the wage group.

Wages are the key element in the price puzzle

Higher wages are at the bottom of increased costs. Although straight-time hourly wage rates from January, 1941, to V-J Day were to be increased only 15 percent by the "little steel" formula, average straight-time hourly earnings were permitted to climb in most industries by an amount equal to or greater than the 33 percent advance in the cost of living. Upgrading, new vacation pay, and other "fringe" increases brought this about.

Since V-J Day, national wage policy has been in the direction of increasing straight-time hourly earnings to compensate for possible decreased take-home pay resulting from the shorter work week, reduced overtime and downgrading. "Fact-finding" boards have established a precedent by decisions in other industries that might encourage demands for a rise in wages of as much as 18 percent for electrical manufacturers. The effect of such an advance on the wage structure of those companies that have not raised wages since V-J Day is summarized in Table I.

The Experience of 86 Companies

Of the 86 companies reporting, 46 have not increased wage rates since V-J Day. Their wage history is shown in Table I. In January, 1941, average straight-time hourly earnings of labor in these companies varied widely. Since then wage rates have increased anywhere from $.05 to $.43 an hour, with those companies having the higher initial rates generally granting the larger increases. If each of these 46 companies were to pile a further 18 percent on top of past advances, the total increase since January, 1941, for most of them would

Percent of companies reporting

range from $.35 to $.60 an hour. This amounts to better than a 75 percent advance for more than half the companies.

The other 40 companies report Labor's straight-time hourly rates are 2 to 18 cents an hour more today than at V-J Day (Table II). Most advances are on the small side and with but three exceptions a further increase is necessary if a final rise of 18 percent over V-J Day is to be granted.

Costs and Prices

The tremendous upsurge of costs contrasts markedly with the more modest rise in prices required if these companies are to realize even the limited profit minimum set by OPA.

Table III shows the picture for 51 companies whose prices still rest where they were in January, 1941. Raw material prices have already been increased 10 to 25 percent for most of them and promise to rise another 10 to 20 percent, while labor costs stand to be jacked up 50 to 90 percent above January, 1941. Nevertheless, two-thirds of the producers believe a price increase of 5 to 20 percent is all present OPA regulations will permit them.

A similar story is apparent from the record of 35 producers who already have been granted price increases of 5 to 12 percent for certain products (Table IV). This is to be expected, inasmuch as OPA would hardly have permitted an initial price rise to cover cost advances that were not even anticipated at the time.

Table III

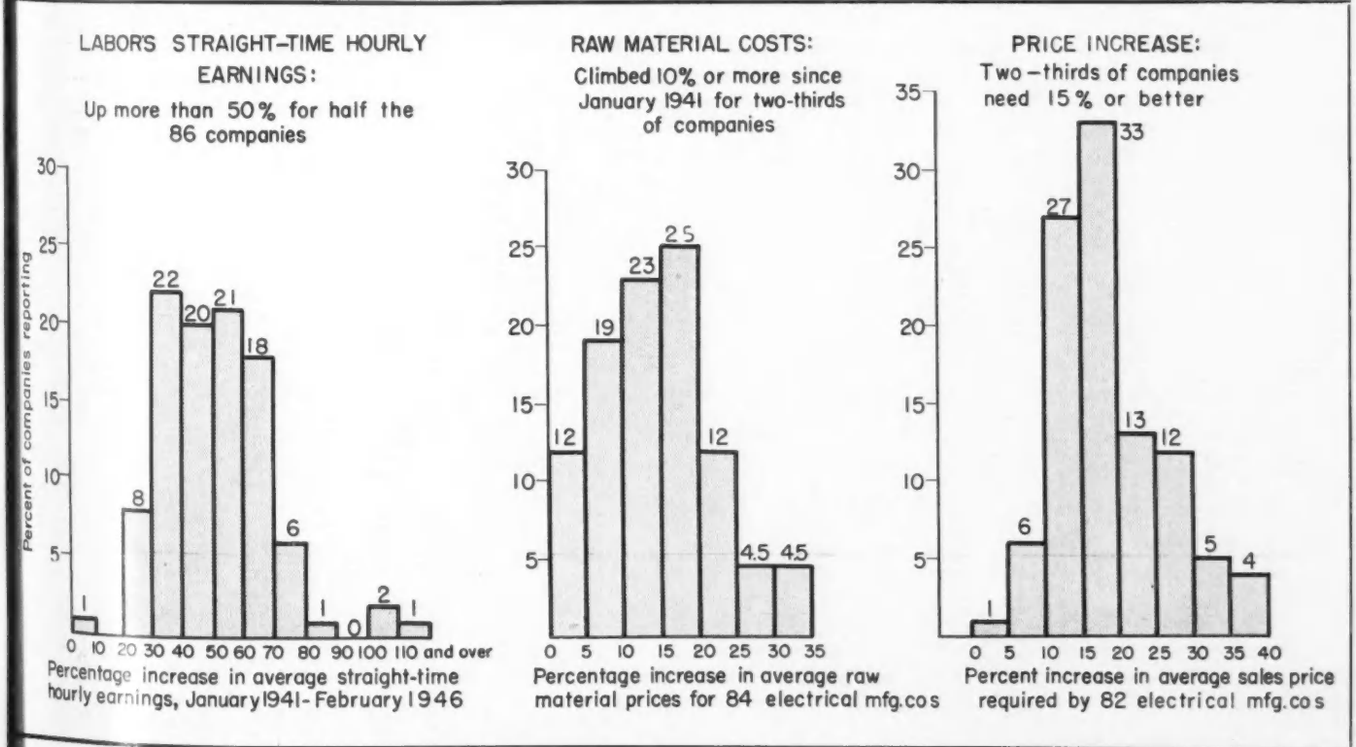
Increase in Average Sales Price Required where Prices have not been Increased since January, 1941 (Reported by 51 Electrical Manufacturing Companies)

% Increase in Average Str. Time Hourly Earnings Since Jan. 1941 if They are Raised 18% above V-J Day	Number of Companies Reporting This Increase	% Increase in Cost of Raw Materials Since Jan. 1941	Further % Increase Expected in Cost of Raw Materials	% Increase in Average Sales Price Necessary Under New Wage-Price Policy
Above 110	3	3– 4%	5–12%	8–15%
100–110	1	12.2	10–15	18
90–100	4	3–33.3	5–10	16–33.3
80– 90	7	7–24	7.5–20.0	10–25
70– 80	9	5–26	10–20	12–38
60– 70	16	0–34	10–20	5–30
50– 60	6	4–31.1	10–23	3–20
40– 50	3	5–20	15–20	8–20
30– 40	2	3– 5	10–18	10

Table IV

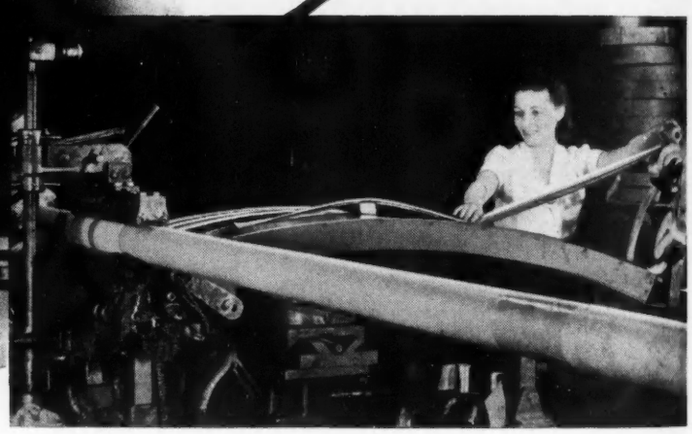
Increase in Average Sales Price Required where the Sales Price has been Advanced by Some Amount Since January, 1941 (Reported by 35 Electrical Manufacturing Companies)

% Increase in Average Str. Time Hourly Earnings Since Jan. 1941 if They are Raised 18% Above V-J Day	Number of Companies Reporting This Increase	% Increase in Cost of Raw Materials Since Jan. 1941	Further % Increase Expected in Cost of Raw Materials	% Increase in Average Sales Price Since Jan. 1941	Additional % Increase in Average Sales Price Necessary
100–110	2	0–20%	7–10%	10–13.3%	0–15%
90–100	4	5–26	10–25	5–18	8.5–36
80– 90	2	4.5	10–25	10–12.5	15–18
70– 80	5	10–33	8–15	1.8–10	10–15
60– 70	11	7–20	10–20	0.7–24	5–40
50– 60	5	3–11	10–15	3–12.5	15–20
40– 50	5	6–30	10–20	6–15	14–25
30– 40	1	20		10	10


LABOR'S STRAIGHT-TIME HOURLY EARNINGS:
Up more than 50% for half the 86 companies
Percent of companies reporting
1 8 22 20 21 18 6 1 0 2 1
0 10 20 30 40 50 60 70 80 90 100 110 and over
Percentage increase in average straight-time hourly earnings, January 1941 - February 1946
RAW MATERIAL COSTS:
Climbed 10% or more since January 1941 for two-thirds of companies
12 19 23 25 12 4.5 4.5
0 5 10 15 20 25 30 35
Percentage increase in average raw material prices for 84 electrical mfg.cos
PRICE INCREASE:
Two-thirds of companies need 15% or better
1 6 27 33 13 12 5 4
0 5 10 15 20 25 30 35 40
Percent increase in average sales price required by 82 electrical mfg.cos

dielectric stress

evenly distributed



To build up condenser, high-quality untreated kraft paper is wound around stud and metal foil inserted at intervals. The use of untreated paper facilitates oil impregnation.

The condenser design is the only one in which the dielectric stress is evenly distributed through the insulating material.

Kraft paper, impregnated with oil under vacuum —the same material which research has proved the best dielectric for transformers and oil-filled cables—keeps dielectric losses at a minimum in the protected condenser. Time or temperature has no material effect on it.

This means low internal losses—low temperature rise—longer, more reliable insulating protection for costly, high-voltage apparatus. Because the condenser design distributes the voltage and reduces maximum stress in the insulation, Westinghouse bushings also save space . . . give greater protection with less weight and bulk.

Type O Condenser Bushings are supplied for voltages 92 kv, and above . . . are interchangeable between transformers and circuit breakers of new construction. Ask your Westinghouse representative for full details or write for bulletin B-3462. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-90567

Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

Type O Condenser Bushings

New Mexico Electric Sale Gets State P.S.C. Approval

Sale of all capital stock and outstanding securities of the New Mexico Electric Service Co. to the New Mexico Electric Service Corp. has been approved by the New Mexico Public Service Commission. The sale is the last step in reorganization of the utility after the Securities and Exchange Commission ordered the American Power & Light Co. to dispose of it.

Consideration for the stock and securities sale, as approved by the New Mexico Public Service Commission, was $1,056,000. The commission also approved issuance and sale by the New Mexico Electric Service Corp. of first mortgage sinking fund bonds, series of 1966, in the principal amount of $700,000, and the issuance of a note in the principal amount of $306,000.

Principal stockholders of the New Mexico Electric Service Corp. are J. F. Maddox, president, and James M. Murray, Jr., vice-president. Other officers are Dwight P. Teed, secretary-treasurer, and R. E. Birmingham and Tom E. Murray, both assistant secretary-treasurers. All men are of Hobbs, N. M.

Maddox, Murray, and Teed owned all outstanding stock and securities of the New Mexico Electric Service Co.

The utility operates utilities at Hobbs, Eunice, Jal, Monument and other areas in Lea County in southeastern New Mexico.

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Kentucky Municipals Can Not Make Union Contracts

Municipally operated utilities in Kentucky cannot make contracts with labor unions, Attorney General Eldon S. Dummit has ruled in an opinion asked following a disagreement between the City of Corbin and the International Brotherhood of Electrical Workers.

The attorney general reviewed a similar opinion by his predecessor, Hubert Meredith, and a Kentucky Court of Appeals ruling in the Bowling Green water works case which Meredith cited to back up his conclusions.

The union contends that Corbin is in competition with privately owned utilities and that the workers have the same rights as they have when employed by a privately owned utility.

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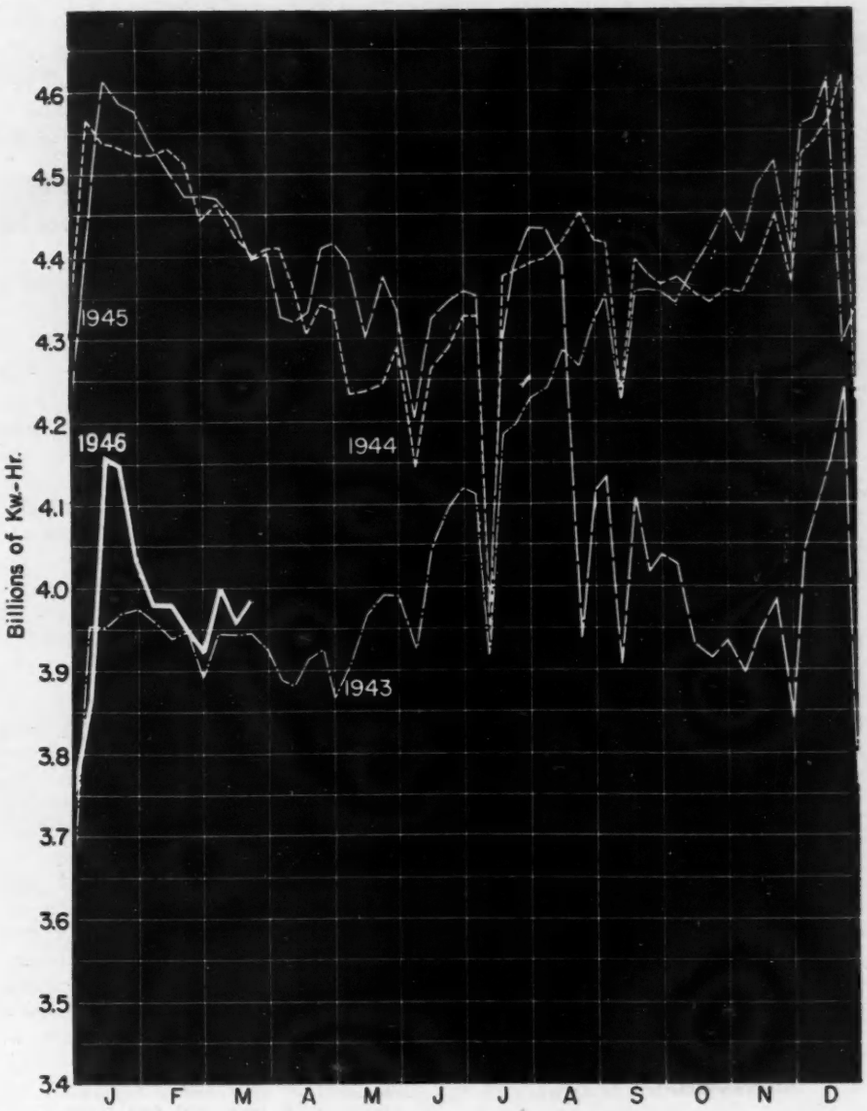
Power for Winslow, Ariz.

To supplement the power from its diesel plant at Winslow, Ariz., the Arizona Power Co. is building a 60-mile, 69-kv. line from Flagstaff to Winslow at a cost of $180,000.



Electric Output Curve Turns Upward

The electric output curve turned upward during the week ended March 16, 1946, according to figures released by the Edison Electric Institute. The amount of electrical energy distributed by the light and power industry totaled 3,987,877,000 kw.-hr., compared with 3,952,539,000 kw.-hr. during the preceding week. During the week ended March 17, 1945, the amount of electrical energy distributed amounted to 4,397,529,000 kw.-hr., this year's figure representing a decrease of 9.3 percent.

In all of the seven major geographical regions of the country, with the exception of the Rocky Mountain States, output was below that of the corresponding week in 1945. The Rocky Mountain group, which reported a decrease of 1.6 percent for the week ended March 9 under the similar week of 1945, entered the plus column during the week ended March 16 with a rise of 1.2 percent. The largest drop was reported by the Central Industrial states—13.5 percent—and the Pacific Coast ran a close second 13.4 percent.

Weekly Output, Millions Kw.-Hr.

1946		1945		1944	
Mar. 16	3,988	Mar. 17	4,398	Mar. 18	4,400
Mar. 9	3,953	Mar. 10	4,446	Mar. 11	4,426
Mar. 2	4,000	Mar. 3	4,472	Mar. 4	4,445
Feb. 23	3,923	Feb. 24	4,474	Feb. 26	4,445
Feb. 16	3,949	Feb. 17	4,472	Feb. 19	4,512
Feb. 9	3,983	Feb. 10	4,505	Feb. 12	4,533
Feb. 2	3,983	Feb. 3	4,539	Feb. 5	4,524
Jan. 26	4,034	Jan. 27	4,577	Jan. 29	4,524
Jan. 19	4,145	Jan. 20	4,588	Jan. 22	4,532
Jan. 12	4,163	Jan. 13	4,614	Jan. 15	4,539
Jan. 5	3,865	Jan. 6	4,427	Jan. 8	4,568
1945		1944		1943	
Dec. 29	3,759	Dec. 30	4,226	Jan. 1	4,337†

†1944

Percent Change from Previous Year

	Week Ending		
	March 16	March 9	March 2
New England	— 4.2	— 5.1	— 1.9
Mid Atlantic	— 3.0	— 5.7	— 4.3
Central Industrial	— 13.5	— 15.7	— 15.9
West Central	— 1.2	— 2.4	— 1.9
Southern States	— 9.9	— 11.9	— 11.8
Rocky Mountain	+ 1.2	— 1.6	+ 1.1
Pacific Coast	— 13.4	— 13.4	— 13.1
Total United States	— 9.3	— 11.1	— 10.6

NEWS ABOUT PEOPLE

Thomas & Betts Announces Engineering Appointments

Announcement has been made by the Thomas & Betts Co., Elizabeth, N. J. of the appointment of Carrol A. Badeau to the position of chief engineer and of Martin D. Bergan as director of research.

Mr. Badeau became associated with Thomas & Betts as a draftsman in 1935. In the course of his rapid rise to his new position, he served as assistant to the general manager, assistant chief engineer, assistant to the president and executive engineer. A graduate of Rutgers University, Mr. Badeau was formerly connected with the firm of Clyde Potts as a civil engineer and land surveyor and with the staff of Row Engineers, Inc., as a mechanical designer. He is chairman of the technical committee of the conduit fittings section of the National Electrical Manufacturers Association and a member of the American Society of Mechanical Engineers.

Though Mr. Bergan started his career in the insurance business, his interest in electrical devices led to his joining Thomas & Betts in 1926 as a tool and die maker. In 1929 he was transferred to the engineering department as a draftsman on machine tools and products. When the development department was organized in 1936 he became a staff member and four years later he was promoted to manager of the experimental department, the position he held until his recent promotion. During World War II Mr. Bergan served on several government advisory committees.

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▶ R. M. BUCHANAN has been appointed assistant mechanical engineer, engineering and construction department, Duquesne Light Co., Pittsburgh. Entering the employ of Duquesne Light in 1926, Mr. Buchanan has served as a turbine operator, turbine repairman, technical engineer in charge of mechanical testing, relief operating engineer, Colfax power station, and as an engineer in the mechanical engineering department of engineering and construction. Mr. Buchanan is a member of the Engineers Society of Western Pennsylvania and the Pennsylvania Electric Association.

ASSUME ENGINEERING DUTIES—Two new assignments recently announced by Thomas & Betts included the appointment of Carrol A. Badeau (right) as chief engineer and Martin D. Bergan as director of research. Both have been with T. & B. for a number of years

J. B. Hayes Elected Head of Canadian Institute

J. B. Hayes, manager of the Nova Scotia Light & Power Co., has been elected president of the Engineering Institute of Canada. Mr. Hayes has been manager of the Nova Scotia properties for 17 years. He had previously been engaged in electric power construction and operations in Nova Scotia, Jamaica Island, Virginia and Iowa.

Mr. Hayes is a past-president of the Canadian Electrical Association and also of the Canadian Transit Association.

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▶ BRUCE J. JENSEN has been appointed general lighting representative, Public Service Electric & Gas Co., succeeding WILLIAM T. BLACKWELL, who will retire on pension. EUGENE M. FAHEY has been named assistant general lighting representative, succeeding Mr. Jensen. Mr. Jensen started with Public Service in 1928 as a designing engineer in the lighting department, Newark. He was promoted to assistant general lighting representative in 1936. Mr. Fahey was identified with the General Electric Co. prior to joining Public Service in 1929. He was promoted to designing engineer in the lighting department in 1940. Mr. Blackwell has been general lighting representative since 1922.

▶ LIEUT. COL. ALOIS HOEFLE of Toledo, Ohio, is serving with Industry Branch, Office of Military Government for Germany (U. S.) in Berlin. In his position as executive officer of the public utilities section, Industry Branch, Colonel Hoefle handles pertinent coordinating, administrative and liaison functions which appear in the normal course of operations. In civilian life, Colonel Hoefle acted as a planning engineer with the Toledo Edison Co.

▶ THOMAS B. ALLARDICE, formerly connected with the American Gas & Electric Service Corp. and recently returned from Italy, has joined Combustion Engineering Co., Inc. While in Italy he served with the Allied Commission as consultant on coal and power. Mr. Allardice will act as consultant in the application of C-E steam-generating units to the utility industry.

▶ J. W. MONK, assistant supervisor of public utilities for the city of Dallas, Tex., has been appointed supervisor of utilities, succeeding FRANK R. SCHNEIDER, resigned. Mr. Monk, who has been associated with the utilities supervisor's office since 1918, headed the utilities office as acting supervisor from 1942 to January

of this year in the absence of Mr. Schneider, while the latter was in the Armed Forces. The resigning utilities supervisor was appointed in 1939.

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Central Maine Power Makes Sales Appointments

Important staff responsibilities to develop the post-war service market have been announced by Central Maine Power Co., Augusta, through Alton T. Littlefield, commercial manager.

Divisional responsibilities follow. A. E. Smith, director of advertising and sales promotion, will have charge of these activities, including a display division under Stanley G. McCurdy, along with approval of lines of merchandise carried by the company. Donald A. Fisher is director of the appliance service division. Frank R. Bailey is difector of farm service, a new division of the commercial department, and M. H. Standish is coordinator of home service. Frank R. Gethro, named sales supervisor, will coordinate departmental activities, assisting the commercial manager and/or the divisional directors, also being responsible for a general sales training program, contact man in the general office on commercial refrigeration, heating and cooking, and working with the engineering department on wiring and installation procedures.

R. D. Morrison, director of the industrial division, is to handle power and industrial electric heating sales, including rate studies and contracts in these fields, and also cooperate with architects and engineers. Robert W. Hudson is director of the lighting division, including rate surveys, municipal lighting, promotion and allied activities.

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▶ MERLE J. MILLER has been named general manager of all public utilities at Bryan, Ohio, under a reorganization of the public utilities system of that municipality. Mr. Miller was formerly superintendent of electrical engineering and purchasing agent.

▶ JOHN NEWHOUSE, lighting engineer of the Northern States Power Co. at La Crosse since 1934, has been promoted to the position of business manager of the Interstate Light & Power Co. at Galena, Ill., and Platteville, Wis. Succeeding Mr. Newhouse as lighting engineer is CLINTON L. SEAQUIST.

▶ BERNARD T. POOR has been appointed sales manager of the Woonsocket (R. I.) division of the Blackstone Valley Gas & Electric Co., succeeding the late Harry E. Matthews.

J. A. Bell Made Utility Sales Director by Electromaster

Announcement has been made of the appointment of Maj. J. A. Bell as director of utility sales by Electromaster, Inc. In his new position, Mr. Bell will be responsible for the company's national sales to direct utility customers.

J. A. Bell

A member of Electromaster's sales staff for eleven years before the war, Mr. Bell served as district manager covering Illinois-Missouri-Indiana-Iowa territory, and for three years was executive assistant to the vice-president in charge of sales. Previously, he was a sales executive connected with utility companies in Topeka, Salina and St. Louis.

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▶ J. M. BOURUS has been elected vice-president and treasurer of the San Diego Gas & Electric Co., San Diego, Calif. Mr. Bourus has been employed by the company since 1918 and became treasurer in 1945.

▶ LIEUT. CMDR. THOMAS N. HUNT, recently returned from duty in the Pacific theater of war, has been appointed sales manager of the Spokane division of the Washington Water Power Co. His responsibilities include residential, commercial and industrial sales in the Spokane area, as well as promotional contacts with allied electrical trades. Mr. Hunt has been connected with the Washington Water Power Co. since 1931.

▶ CHARLES C. SHOTWELL has been appointed supervisor, lighting applications section (formerly lighting service section) of the market studies and service division of the Philadelphia Electric Co. Mr. Shotwell joined the company in 1933 in the lighting department. In 1937 he was transferred as a lighting specialist to the promotional division. In 1939 he was assigned to the lighting service section to assist in a supervisory capacity.

▶ H. I. BABBITT, manager of West Penn Power Co.'s western division, will retire on May 1. Although Mr. Babbitt has not yet reached retirement age, he asked to be relieved of his duties to have more time for leisure and travel while still able to enjoy it. The new western division manager will be J. V. SOISSON, formerly assistant division manager of the company's central division with headquarters at Charleroi.

▶ OSCAR BOWDEN has joined the Ohio Public Service Co. as production engineer in the Lorain Division to succeed PAUL ROGERS, who has been transferred to the Marion-Reserve Division to take over the duties of production engineer there.

OBITUARY

▶ JOSEPH B. CRANE, export manager of Combustion Engineering Co., New York, N. Y., died suddenly of a heart attack at his home in Bridgewater, Conn., on March 9 at the age of 66. Following graduation from Trinity College in 1902, Mr. Crane joined the test department of General Electric Co., later becoming assistant superintendent of that department. From 1907 to 1915 he was commercial manager of the Great Northern Power Co. at Duluth. For the next three years, he was with the American & Foreign Power Co. engaged in investigations and reports on South American properties. He then became vice-president of the Lehigh Power Co. and early in 1921 he joined the Ladd Boiler Co. When the latter company was acquired by Combustion Engineering Co. in 1925, he became Pittsburgh district manager, the position he held until 1937 when he was made manager of the export department. Mr. Crane was a member of the American Society of Mechanical Engineers and was the author of numerous engineering society papers and a contributor to the technical press.

▶ WILLIAM A. HIDDLESON, at one time general manager of the Bristol Gas & Electric Co., now known as the East Tennessee Light & Power Co., died at his home in Bristol, Tenn., on March 8.

▶ HERBERT C. BOLE, supervisor of the Lakeshore district during 12 of his 35 years of service with the Montreal Light, Heat & Power Consolidated and the Quebec Hydro-Electric Commission, died on March 5 in Montreal. He was 59 years of age.

MANUFACTURING MARKETS

Emerson Integrates Manufacturing Units

Post-war expansion program of Emerson Electric Mfg. Co., St. Louis, Mo., recently announced, involves moving all manufacturing and office facilities from its downtown buildings to a plant located at 8100 Florissant Ave., which was recently leased from RFC. The $5,000,000 plant, which is located on a 40-acre plot, was erected under the company's supervision during the war for development and manufacture of gun turrets. Emerson previously acquired the 162-acre tract on which it is built and completed its first plant there in 1940, for the manufacture of motors for the refrigeration and air-conditioning industry.

All operations will be consolidated at this location and the entire move is scheduled for completion in September, without serious interruption of production. An enlarged program of production of motors, fans, arc welders and several new products is now underway. A substantial engineering program is being continued for the Army and Navy.

The move will increase available work area by approximately 50 percent; increase in employment is expected to average above 25 percent. Modern production facilities and their arrangement in the new plant are expected to result in production increased up to 200 percent on some of the company's products.

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Electrical Manufacturers Cleared of Conspiracy

Owners of patents are not in violation of Sherman anti-trust laws when minimum prices under which licensees are permitted to sell devices embodying such patents are fixed, Federal Judge F. Ryan Duffy ruled recently in a case involving twelve electrical manufacturers.

The decision cleared Line Material, General Electric, Kearney, Matthews, Pacific Electric Manufacturing, Porcelain Products, Railway & Industrial Engineering, Royal Electric, Schweitzer & Conrad, Southern States Equipment, Westinghouse, and T. F. Johnson of the government's charge of unlawful conspiracy to violate the anti-trust laws by licensing and cross-licensing patents on fuse cutouts.

Case was started on November 14, 1944 in the Eastern District of Wisconsin Federal court and terminated on March 6 with the Duffy decision.

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More Strikes Settled

Settlements of steelworker strikes have been announced for the DeLaval Steam Turbine Co. and the Trenton Brass & Machine Co. on the basis of a wage increase of 18½ cents an hour. Normal production was suspended at both on January 21, when the national steel strike began.

The 117-day-old strike at the Johns-Manville plant in Manville, N. J., has also ended, an agreement having been reached on a 13½ cent hourly pay increase.

Kellogg-Philco Agreement Provides Air-Wire Sets

An agreement whereby FM mobile radio-telephone facilities will soon be available to the 12,000 communities served by the independent telephone industry was made known recently in a joint statement issued by John Ballantyne, president of Philco Corp., Philadelphia and James H. Kellogg, president of Kellogg Switchboard & Supply Co., Chicago.

Briefly, the agreement means that Kellogg will supply and install the equipment made by Philco under an exclusive distributing agreement. The units made under the agreement will be designed primarily for trucks, automobiles, buses, taxicabs, yachts, and other mobile equipment.

Mobile radio telephone calls will be handled by special mobile telephone operators at the local central office. The conversations will come into the central station by telephone wire and go out to the traveling telephone by radio. Similar equipment is expected to be used to extend telephone service to remote farm areas which cannot now be reached economically by conventional systems.

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Allied Control Expands

Allied Control Valve Co., Inc., South Norwalk, Conn., has acquired the Aircraft Solenoid Valve Division of the Henry Valve Co. of Chicago, Ill.

REGISTRATION OK—Henry Oberle, Copperweld, and T. D. Dally, Reliable, being registered at the 4th annual NRECA meeting held recently in Buffalo, N. Y. Irene Deerman registered 31 manufacturers who exhibited the latest designs in equipment for use on rural lines

Hal McPherson, formerly with the Henry Valve Co. as chief engineer, is now with Allied as vice-president in charge of engineering.

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High Temp. Insulation Research Undertaken

The Formica Insulation Co., manufacturers of laminated plastic materials, is now engaged in a special development program, sponsored by the U. S. Navy Department Bureau of Ships, having for its objective the production of laminates from silicone resin and fibre-glass fabric base for use in applications where resistance to high temperature is necessary.

George H. Clark, vice president in charge of engineering and research at Formica, disclosed that the development program now under way at the company's laboratories and factory in Cincinnati has proceeded to a point where essentially satisfactory laminated sheet material has been produced and is being tested.

Clark revealed that the development is using silicone resin made by the Dow-Corning Corp., Midland, Mich. and fibre-glass fabric produced by Owens-Corning Fibre Glass Corp., Newark, Ohio.

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Hardinge Co. Buys Clutch Rights From Automatic

Manufacturing and sales rights for the BLM "Auto-Centri" clutch have been obtained by the Hardinge Co., Inc., York, Pa., from the Automatic Clutch Corp. of Canada, a subsidiary of the British Meter Co. The rights covers the complete range of sizes from fractional horsepower to 5,000 hp. and for all types of power drives.

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Domestic Toaster Enters Chicago Hotel Market

Broadening of the domestic automatic toaster market by its entry into the hotel trade for individual room service is indicated by recent improvements in service at Ambassador-East Hotel, Chicago, Ill.

Management of this hotel has purchased a large number of Camfield automatics for its deluxe room service. Toast will be made in the room by the guest rather than in the kitchen.

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Bulb Ceilings Removed

OPA has announced the suspension of price controls for all types of electric lamp bulbs, including fluorescent, therapeutic, gaseous, carbon and arc lamp.

Field Reports on Business

Electrical equipment inventories are reported at a new low. Movement of heavy equipment is practically non-existent as the result of the strike situation. Small electrical appliances are beginning to appear on retail counters in increased quantities. Retail trade throughout the country continues brisk.

NEW YORK

Strikes now in effect and those recently settled have had a marked effect upon the movement of electrical equipment, component parts and materials. The inventories are reported as at a new low. Movement of heavy equipment is practically non-existent.

Heavy appliances are coming into the area, but in very limited numbers. Distributors are shipping all units to retail outlets as quickly as received. The number received is dependent upon the supply of component parts available to the manufacturers. Fractional horsepower motors, switches, heating units and materials, such as brass and steel, are among the components reported extremely short.

Supply of new incandescent fixtures has about dried up because of the shortage of brass sockets. They have been short since September, but have just about ceased to come into the market.

Ballasts for fluorescent fixtures were tighter this past week than for any known period. They have affected the number of new fluorescent fixtures coming into the area for quite some time but now have reached such a low trickle that replacements cannot be taken care of.

High income in the theaters is being reflected in new lighting installations and in the installation of new sound equipment.

The early spring weather is ushering in activity in the underground field. Replacement cable is being pulled in as well as new and heavier current carrying circuits. In some instances provisions are being made to install heavier switching equipment when it is available.

PACIFIC COAST

Pacific Coast electrical business is largely dependent, directly and indirectly, on a still largely agricultural west, so that apparently favorable factors are good electrical news.

Heavy snow pack along the Sierras assures ample water for California's bumper crops of 1946, which is fortunate because of long-time deliveries of pumping motors and transformers even before the electrical strike closed several large factories.

Cyclops Iron Works has been awarded a $100.280 contract for the 230-ton traveling overhead crane at Keswick power plant.

The 21-week machinist strike, settled at 18½-percent increase after charter of striking machinist lodge had been removed, releases much long dammed-up electrical work in Bay Region, including private shipyards not building Navy craft. These last must first secure government approval of wage increase.

Settlement of electrical strike removes justified fears for acute lamp shortages for such emergency demands as railroad and traffic though until local plants can resume full operation, with the skilled workers whose full return is problematical, many large municipalities will follow such temporary legislation as that adopted last week by San Francisco. This provides for cancellation of so-called midnight circuits and no replacements except at intersections.

NEW ENGLAND

During the next five years, more than $270,000,000 will be spent for plant additions, service extensions and improvements to New England power companies, according to C. L. Campbell, chairman of the New England Council's Power Industry Committee. Boston Edison plans to extend the installation of equipment at its Mystic Station during the next two years. Preparations have begun for a third 50,000-kw. General Electric turbo-generator and a Combustion Engineering boiler which are scheduled for operation in 1947. During 1946 work will be pushed to extend the company's service through furnishing additional switching facilities for the 13.8-kv. lines passing through the Somerville area, and other primary network authorized will extend the Roxbury system. Approximately 5,400 kva. in static capacitors were installed on poles in 1945 and it has been decided to install 20.000 kva. additional in 1946.

American Steel & Wire Co., New Haven, Conn., is preparing estimates for a $3,000,000 electrically driven 5,800-ft. lift tramway located near Palm Springs, Calif. More than $1,000,000 in small contracts has been placed by Midwest companies with New England plants.

Return to work of more than 16,000 employees of General Electric in plants throughout this district is following the strike settlement.

More electric vacuum cleaners are available and portable air-heaters are seen on retail counters.

CHICAGO

Purchase of Electric Winding Co. as part of an expansion of its component parts division is announced by Hallicrafters. Maguire Industries, producers of dehydrated foods, has turned to the electronics field, having bought more plant capacity in Chicago, Mt. Carmel, Ill., and Cleveland. Construction has started at Vaughan General Hospital, Hines, Ill., of a radio system providing small pillow speakers for all 2,100 beds. Automatic Washer Co., Newton, Iowa, says operations this year may be affected adversely by material shortages and stringent price policies, which have so far also prevented it from reaching an "appreciable production volume" on its regular line of washing machines. Chicago Flexible Shaft Co., which has changed its name to Sunbeam Corp., estimates it will take two years to meet pent-up demand for its products, and it may defer introducing new items to permit concentration on established items. Naxon Utilities Corp. has purchased 18 acres in Skokie, Ill., for a new factory.

The 50,000-kw. generating unit recently put in operation at Dixon station of Illinois Northern Utilities Co., plus other changes, has boosted capacity of the Commonwealth Edison group from 2,254,000 to 2,303,000 kw. A 107,000-kw. unit and steam generating equipment is under construction at Calumet Station, Chicago, scheduled for completion early in 1947.

SEC RULINGS

The Securities and Exchange Commission recently issued a series of orders affecting electric utility companies.

GENERAL GAS & ELECTRIC CORP.'s and ASSOCIATED UTILITIES CORP.'s application to acquire 5,910 shares of common stock of Atlantic Utility Service Corp., an affiliated former service company now in process of liquidation, has been approved. (Release No. 6439).

NY PA NJ UTILITIES Co.'s application for authority to adjust the carrying amounts of its investments in majority-owned subsidiaries has been approved. NY PA NJ Utilities Co. is a subsidiary of General Public Utilities Corp. Also approved is the allocation of these amounts to the subsidiaries and the reduction of the carrying amount of its investment in 17,744 shares of the $5.50 dividend series preferred stock of New England Gas & Electric Association to an amount equal to $27.25 a share for each share owned. (Release No. 6443).

CENTRAL NEW YORK POWER CORP.'s proposal to refinance its preferred stock through a new issue of preferred stock with other funds, including a $4,000,000 capital contribution from its parent, the Niagara Hudson Power Corp., has been approved. SEC stipulated that the new preferred issue, consisting of 200,000 shares of $100 par value each, may not be sold at competitive bidding until the transaction has been "expressly authorized" by the Public Service Commission of New York. (Release No. 6457).

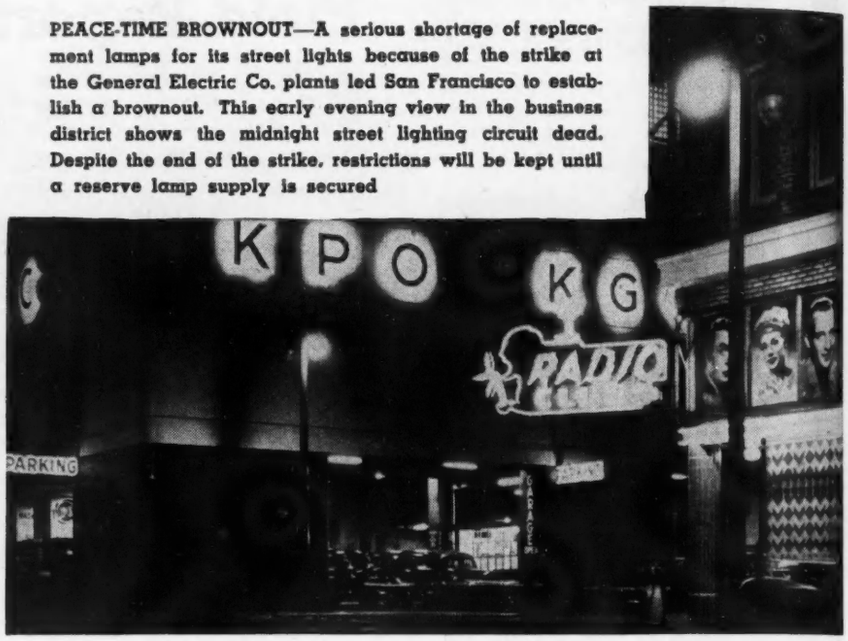
NORTH AMERICAN LIGHT & POWER CO., with the approval of the SEC, has withdrawn its request for permission to sell its interests in the Missouri Power & Light Co. to Continental Gas & Electric Corp. The proposed sale was to have been a step in compliance with an order of the commission, but North American Light & Power said the Public Service Commission of Missouri had saddled it with conditions which it considered "unreasonable." North American Light & Power and its subsidiary, Illinois Traction Co., have obtained permission to withdraw their joint application for authority to sell their interests in the Kewanee Public Service Co. to James S. Barcus of Wilmette, Ill. (Releases No. 6468 and 6469).

UNITED LIGHT & RAILWAYS CO.'s proposal to sell its remaining interest in International Paper Co., represented by 2,436 shares of $100 par value 5 percent cumulative preferred stock, has been approved. (Release No. 6464).

NEW ENGLAND POWER ASSOCIATION and its subholding companies have received commission approval of their reorganization plan filed voluntarily. The subholding companies include Massachusetts Power & Light Associates, North Boston Lighting Properties, Rhode Island Public Service Co., Massachusetts Utilities Associates common voting trust and Massachusetts Utilities Associates. The plan provides for the termination of the common voting trust and the substitution of a single holding company, to be known as New England Electric System, for New England Power Association and its subholding companies, which operate electric and gas public utility companies in Vermont, New Hampshire, Massachusetts, Rhode Island and a section of Connecticut. (Release No. 6470).

PUBLIC SERVICE CO. of Indiana has been granted an extension until May 15 to issue and sell at competitive bidding 150,000 shares of cumulative preferred stock and to retire outstanding preferred. (Release No. 6438).

PEACE-TIME BROWNOUT—A serious shortage of replacement lamps for its street lights because of the strike at the General Electric Co. plants led San Francisco to establish a brownout. This early evening view in the business district shows the midnight street lighting circuit dead. Despite the end of the strike, restrictions will be kept until a reserve lamp supply is secured



Union Electric Gives Raise

Union Electric Co. of Missouri has granted its linemen and various other employees who are members of the International Brotherhood of Electrical Workers (A.F.L.) an increase of 12 cents an hour. In addition, the employees will each receive $85 additional for 1945, in "recognition of their cooperation," and $60 in retroactive pay to October 5, 1945.

UTILITY REPORTS

	Net Income 1946	1945
*Central Arizona Lt. & Power	$ 988,068	$ 731,291
*Texas Power & Light	3,135,981	2,730,796
*Puget Sound Power & Light and subs	4,174,653	5,031,979
	1945	1944
†American Gas & Electric and subs	12,067,420	12,089,136
†Central Hudson Gas & Elec.	1,042,968	1,045,081
†Commonwealth Edison and subs	24,577,746	22,651,796
†Connecticut Light & Power	4,189,620	3,853,633
†Duke Power	5,098,331	4,822,134
†Louisville Gas & Electric	2,802,489	2,772,631
†Pacific Gas & Electric and subs	21,952,014	22,037,339
†Philadelphia Electric and subs	17,302,273	16,798,828
†Potomac Electric Power	4,074,440	3,634,030
†Savannah Electric & Power	218,078	391,434
†Toledo Edison	2,974,997	2,992,367

*Twelve months ended January 31.
†Twelve months ended December 31.

2 War Plant Installations Offered for Sale or Lease

The war plants containing a total of 24,000 kw. of generating capacity in four units have been offered for sale or lease by the War Assets Corporation.

One of the plants is located at Ludington, Mich., where it was operated by the Dow Magnesium Corp. Its equipment includes two 6,000-kw. turbo-generators which exhaust to process steam lines. The units are served by two 225,000-lb. per hr. pulverized coal boilers. The installation is described as "definitely designed for use in a manufacturing process."

The other plant is located at Baton Rouge, La., where it was operated by the Aluminum Ore Co., an Alcoa subsidiary. Its equipment includes two 6,000-kw. 110-psi. back pressure turbines served by three 140,000-lb. per hr. gas-fired boilers. The power plant was built to be operated as an integral part of the general alumina system. Steam from the turbines exhausts directly for process use. The power plant is described as inefficient for independent use.

The Ludington plant is identified by Plancor No. 477. The Baton Rouge plant is designated Plancor No. 226-AO.

Buys Transmission Line

To provide service for its customers in Dunkirk, the City of Stoughton has received permission from the Wisconsin Public Service Commission to purchase the electric property of the Hanerville transmission line for $7,250.

Sales Opportunities

Manufacturers Make Sales Assignments

Electrical manufacturing companies have recently made the following appointments to their sales staffs:

A. B. CHANCE Co. has appointed Vaughn Coe district sales manager for the states of Nebraska, Kansas, Missouri, Oklahoma and Arkansas, with headquarters at the company's home office in Centralia, Mo. Mr. Coe, who spent three years in the Navy, represented the company in Minneapolis before entering service.

Copperweld Steel Co. has placed Harry C. Dever in charge of the Atlanta office, covering the state of Georgia, Florida, South Carolina and North Carolina. Mr. Dever has been in military service for three years. Prior to his war service, he covered the southeastern part of the United States for Copperweld.

Appleton Electric Co., Chicago, has appointed William A. Davidson Pittsburgh district manager, with offices at 418 Bessemer Bldg., Pittsburgh 22, Pa.

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New Policy Replaces Meters For Flat Fee

Instituting a new policy that precludes the need of the user maintaining his own repair department, Marion Electrical Instrument Co., Manchester, N. H., recently announced a guarantee and replacement program.

The policy states that all the company's hermetically sealed instruments are completely guaranteed for a period of six months, and that, after this period, the company will replace all 2½- and 3½-in. types (ranging from 200 microamperes upward) for a flat fee of $1.50 per instrument. This policy is to be in effect as long as the seal is unbroken and is to cover mistreated, overloaded and burned out intruments.

Meters of the same size with sensitivities greater than 200 microamperes will be replaced, under the same conditions, for a flat fee of $2.50, the company reports.

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Electro Rust-Proofing Bought by 2 Concerns

Wallace & Tiernan Co., Inc., and The Dorr Co. have recently purchased the interest of E. H. Ingle and have become joint owners of the Electro Rust-Proofing Corp. of Dayton, Ohio. E. H. Ingle continues as president and general manager.

The Electro Rust-Proofing Corp. specializes in the furnishing of equipment and engineering services for the cathodic protection of tanks and submerged metal structures. The present organization is retained and plans are being completed for expansion of research and service departments.

VIRGINIA—Virginia Electric & Power Co., Richmond, plans expansion in generating station on Reeves Ave., Norfolk, including addition to building for extensions in steam division, and installation of equipment for increased capacity. Cost estimated about $3,250,000. This is part of 1946 expansion and improvement program of company, which also will include several new transmission lines. Among these will be a 110,000-volt line from Richmond to Bremo, where connection will be made with local generating station of Virginia Public Service Co., as well as with a similar high-tension line to be constructed by Appalachian Electric Power Co., Bluefield, W. Va., from Lynchburg to Bremo, for exchange of power facilities. Another 110,000-volt transmission line is planned from Chesterfield power station, near Drewrys Bluff, to a connection with present high-tension line between Richmond and Newport News, with steel tower crossing over James River, estimated to cost approximately $750,000. An additional expenditure of about $1,000,000, will be made for extensions in rural electric system, including primary and secondary lines, power substations, other facilities.

CALIFORNIA—Los Angeles Water and Power Bureau, Purchasing Dept., 311 South Spring St., Los Angeles, will receive bids until April 10 for one 75,000-kw., 60-cycle steam turbine-electric generating unit. Also for two additional such generators; one complete set of spare parts for generator unit; one each, eccentricity, vibration, expansion and spindle position indicators; and for two additional such indicators (Specifications 9376).

NEW JERSEY—Ford Motor Co., Dearborn, Mich., has authorized immediate construction of new assembling works on U. S. Highway No. 1, Raritan Township, near Metuchen; tract of about 75 acres recently secured. It will consist of a main one-story building, about 500,000 sq. ft. floor space, with machinery and electrical equipment for large capacity. Also several auxiliary structures for miscellaneous service. A power plant is planned. Entire project is estimated to cost about $5,000,000. Albert Kahn Associated Architects & Engineers, Inc., New Center Bldg., Detroit, Mich., is architect and engineer.

CALIFORNIA—Bureau of Reclamation, Denver, Colo., will receive bids until April 16 for two motor-driven, horizontal-shaft, single-stage, centrifugal type pumping units, each complete with pump, motor, flexible coupling and all accessories required for a complete operating unit for Ygnacio Canal pumping plant; and for three similar complete pumping units for Clayton Canal pumping plant, both Central Valley project, Calif. All equipment will be installed by government (Specifications 1229).

TEXAS—Public Service Board, San Antonio, plans expansion in steam-electric generating station on Mission Rd., with installation of new turbine-generating unit, about 25,000-kw. rating, high-pressure boiler and auxiliary equipment. Cost estimated close to $2,000,000. Proposed to have equipment ready for service early in 1948.

WISCONSIN—Wisconsin Electric Power Co., Milwaukee, plans new 132,000-volt transmission line from power substation on North 28th St., Milwaukee, to Port Washington, using steel towers. Proposed to begin work in near future. Cost reported close to $1,200,000. Plans also under advisement for other transmission line construction, to include new line btween generating station on Commerce St. and 28th St. substation, to cost about $120,000.

NEW YORK—Consolidated Edison Co., New York, has taken out permit to make extensions and improvements in generating station at 666-80 First Ave., estimated to cost about $500,000. Work is scheduled to be placed under way at once.

ARIZONA—Bureau of Reclamation, Denver, Colo., will receive bids until April 17 for five 17.5 by 34.66-ft. fixed wheel gates, five hydraulic hoists for gates, and one set of erection equipment for installation at Davis dam, Davis dam project, Kingman. Equipment will be installed by Government (Specifications 1203).

NORTH CAROLINA—Electric Dept., Kinston, plans extensions and improvements in municipal steam-electric generating station, with installation of additional equipment for increased capacity. Cost estimated close to $450,000. Proposed to begin work soon.

FLORIDA—Florida Power & Light Co., Miami, plans new transmission line from St. Augustine to Daytona Beach. Also new line between Miami and Fort Lauderdale, and another high-tension line from latter place to vicinity of Lake Okeechobee. This is part of general line extension program planned by company, covering transmission and distribution lines in different parts of territory, with power substations and other operating facilities. Entire project is reported to cost in excess of $1,500,000.

WASHINGTON—Bureau of Reclamation, Denver, Colo., will receive bids until April 5 for five 115-kv., three-pole, single-throw, oil circuit breakers; two similar oil circuit breakers; one 115-kv., three-pole, selector-type manually gang-operated, outdoor-type disconnecting switch; and two similar disconnecting switches, all for installation in switchyard at Grand Coulee power plant, Columbia Basin project. Equipment will be installed by government (Specifications 1212). Also, until April 15, for two 350-ton, double-trolley, motor-operated, overhead traveling cranes for Grand Coulee power plant, Columbia Basin project. Equipment will be installed by government (Specifications 1235).

TENNESSEE—International Harvester Co., 180 North Michigan Ave., Chicago, Ill., has plans maturing for new branch plant at Memphis. It will comprise a main one-story building for parts production and assembling, with machinery and electrical equipment for large capacity. Also will build boiler plant, power substation, compressor station and number of miscellaneous buildings. Project reported to cost over $3,500,000. Work to begin this spring.

MASSACHUSETTS—Boston Edison Co., Boston, is arranging a 1946 expansion and improvement program in power plants, transmission and distributing lines, power substations and other operating facilities, reported to cost approximately $11,500,000, over period extending into 1947. Work on different branches of project is scheduled to be placed under way soon.

MINNESOTA—Water and Light Dept., Virginia, has revised plans in progress for expansion and improvements in municipal steam-electric generating station. Recent call for bids has been postponed and new call is expected in near future.

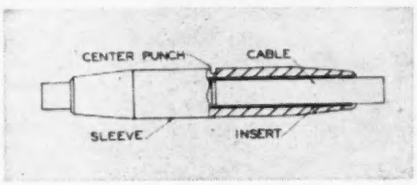
NEW EQUIPMENT

Splicing Sleeve Utilizes Hard Wire, Threads, Abrasives

New style sleeves for splicing distribution lines are being announced by James R. Kearney Corp., 4236 Clayton Ave., St. Louis 10, Mo. Sleeves are aluminum, copper or copper-plated for use on aluminum and copper conductors or on telephone lines. The report states results of tests demonstrate high conductivity of sleeves and show mechanical strength greater than rated strength of wire being spliced.

The copper sleeve features a coiled wire insert that is harder than sleeve wall and wire being spliced. Pressure from rolling machines forces insert into wire and sleeve wall, forming the joint. The aluminum sleeve utilizes a threaded wall for holding power and conductivity; the telephone sleeve has an abrasive wall lining for this purpose.

All sleeves are tapered at ends to facilitate starting into splicing machine. They possess rounded center punch to determine automatically the wire length inside the sleeve. Copper sleeve handles wire sizes 8 to 500 MCM, aluminum sleeve takes 6 to 4/0 and telephone sleeve accommodates 14 NBS to 6 BWG. The diameter of the completed splice is reported as slightly larger than outside diameter of the conductor.



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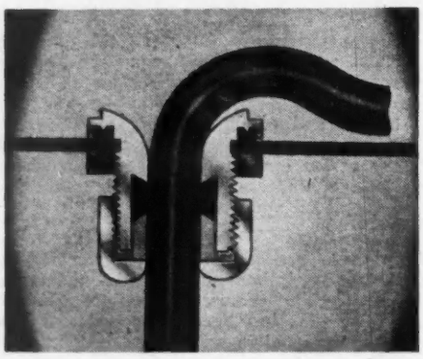
New Water-tight Cable Lead-Through Clamp

A new type of cable clamp is now available which is reported to provide a secure and distortionless anchor for various sizes of jacketed cables and to act as a barrier to the flow of moisture along the outside of the cable cover. As shown in the cross-section illustration, tightening the nut at the rear of the clamp places pressure on the internally mounted captivated rubber gasket through which the cable is passed. The angular wells of the cavity containing the gasket are so designed that pressure results in the rubber flowing inward to take an evenly distributed grip upon the cable.

All metal parts exposed to contact with the cable are reported to be smoothly finished and thereby to eliminate possibility of cutting the cable insulation.

Neither the effectiveness of the clamp nor its watertight feature are said to be impaired by removing and reinstalling. Originally designed and used for both rigid and flexible coaxial lines, the clamp is said to be effective when used for radio leads and high or low tension line lead-ins, or for other leads. It is designed and manufactured by H. H. Buggie & Co., Toledo 1, Ohio.



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Coach Heated by Resistors In Pickup and Brake Circuits

New 44-passenger electric trolley coach which is heated by the accelerating and braking resistors supplemented, when needed, by auxiliary resistors, all of which are under thermostatic control, is being announced by Marmon-Herrington Co., Inc., 1511 West Washington St., Indianapolis 7, Ind.

Propulsion motor is mounted longitudinally on rubber bushings at the rear driving forward through a propeller shaft to the rear axle. Propulsion equipment may be either of the General Electric or Westinghouse type and is provided with electric braking.

Underframe of the coach is made of steel and aluminum alloys and has 7-in. steel center sills. Among the specifications reported are: weight, 19,000 lb.; tires, 11.00-22; wheelbase, 235 in.; turning radius over end of body, 42 ft.; height over roof, 9 ft. 4 in.; and length over bumpers, 36 ft. 5¾ in.

Relay Contact Carriers Lock in Position

New double-pole, double-throw power relay (type PR-8) designed for motor starting, heater loads, etc., is being announced by Potter & Brumfield Sales Co., 549 West Washington Blvd., Chicago 6, Ill. The relay is reported to have fine silver contacts which are $\frac{5}{8}$ in. in diameter and are rated at 15 amp. on non-inductive load at 110 volts a.c.

Metal parts are stated to be plated to resist corrosion, the insulation to be of molded or laminated Bakelite, the coils to be layer wound on insulating bobbins and to be baked varnish impregnated.

The full floating contact carriers are reported to lock in place and permit heavy contact pressures. Units are stated to be copper shaded to prevent hum. Snap action is provided by a spring. Coils operate on 4 va. and are stated not to heat on continuous duty.

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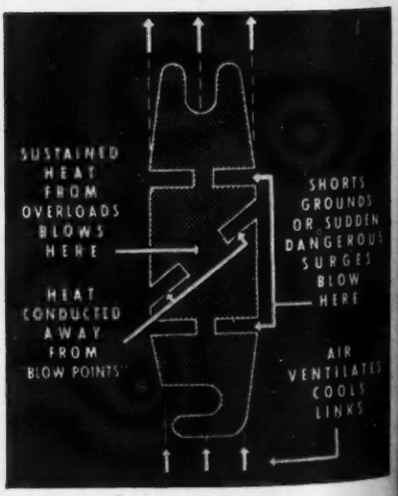
Fuse Link "Blows" Center On Overload; End on Short

A balanced lag link which is reported to put extra lag in the low overload working range to avoid unnecessary "blowing" is reported by Pierce Renewable Fuse Co., Inc., 143 Pacific Ave., Buffalo 2, N. Y. At the same time protection is said to be provided against damage to equipment from high current surges due to shorts or grounds.

Three or more "blow points" are designed into the links according to size. The center "blow point" is placed to carry the current of sustained overloads and is said to "blow" only if the gradually increasing overload becomes dangerous.

The narrow "blow points" at the ends are reported not affected by these low overloads, but to "blow" if shorts or grounds cause surges of current that endanger the equipment.

Case of the fuse is ventilated and stated to eliminate afterblow. It is made in ferrule type from 3 to 60 amp. for use on 250- and 600-volt circuits and in knife blade type from 70 to 600 amp. for use on the same voltages.


SUSTAINED HEAT FROM OVERLOADS BLOWS HERE
HEAT CONDUCTED AWAY FROM BLOW POINTS
SHORTS GROUNDS OR SUDDEN DANGEROUS SURGES BLOW HERE
AIR VENTILATES COOLS LINKS